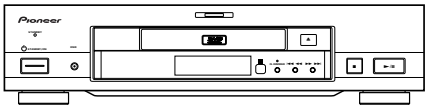
Service Manual



ORDER NO.
RRV2011

DVD PLAYER

DV-05
DV-S5

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Region restriction code (region number)	Remarks
	DV-05	DV-S5			
KU/CA	◯	–	AC120V	1	
LB	–	◯	AC110V	3	

CONTENTS

1. SAFETY INFORMATION ····· 2
2. EXPLODED VIEWS AND PARTS LIST ····· 3
3. SCHEMATIC DIAGRAM ····· 12
4. PCB CONNECTION DIAGRAM ····· 39
5. PCB PARTS LIST ····· 54
6. ADJUSTMENT ····· 61
7. GENERAL INFORMATION ····· 66
   7.1 PARTS ····· 66
      7.1.1 IC ····· 66
      7.1.2 DISPLAY ····· 78
   7.2 DISASSEMBLY ····· 79
   7.3 BLOCK DIAGRAM ····· 80
   7.4 CIRCUIT DESCRIPTION ····· 82
      7.4.1 VIDEO SIGNAL PROCESSING BLOCK ·· 82
8. PANEL FACILITIES AND SPECIFICATIONS ···· 83

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PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

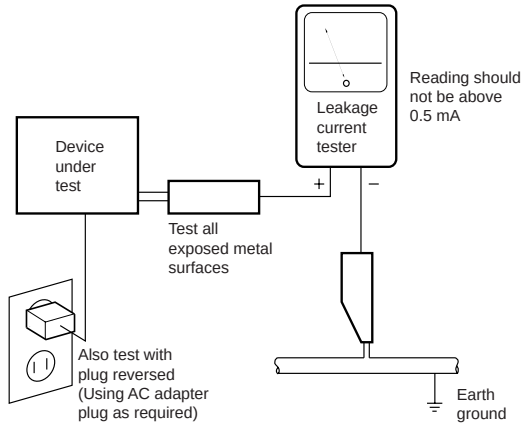
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Reading should not be above 0.5 mA
Leakage current tester
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

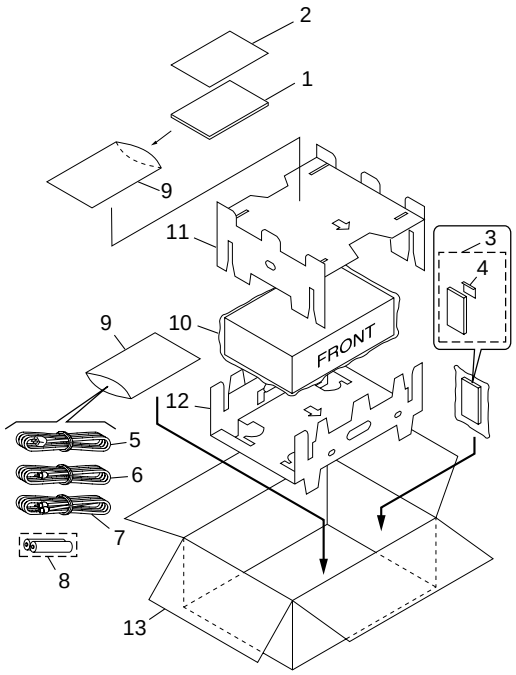
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on product are used for disassembly.*

2.1 PACKING

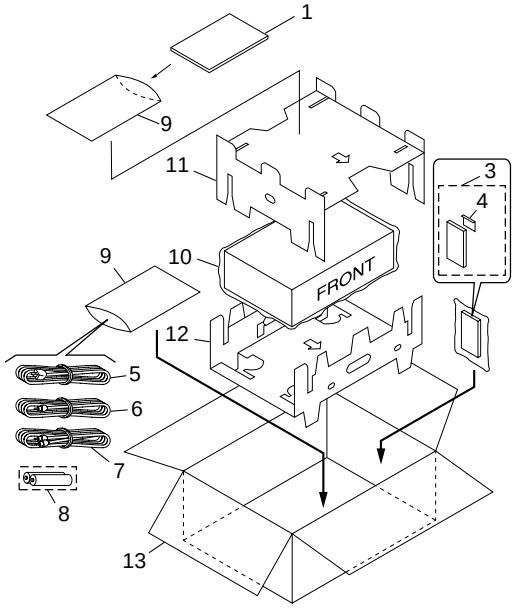
2.1.1 PACKING for DV-05



● PACKING PARTS LIST for DV-05

Mark	No.	Description	Part No.
	1	Instruction Manual (English)	VRB1205
NSP	2	Warranty Card	ARY1026
	3	Remote Control Unit (CU-DV026)	VXX2602
	4	Battery Cover	VNK4335
⚠	5	AC Power Cord	ADG7021
	6	Video Cord (L=1.5m)	VDE1024
	7	Audio Cord (L=1.5m)	VDE1023
NSP	8	Battery(R6P,AA)	VEM-013
	9	Polyethylene Bag	Z21-038
	10	Mirror Mat Sheet	Z23-007
	11	Protector A(Paper)	VHB1060
	12	Protector B(Paper)	VHB1061
	13	Packing Case	VHG1780

2.1.2 PACKING for DV-S5

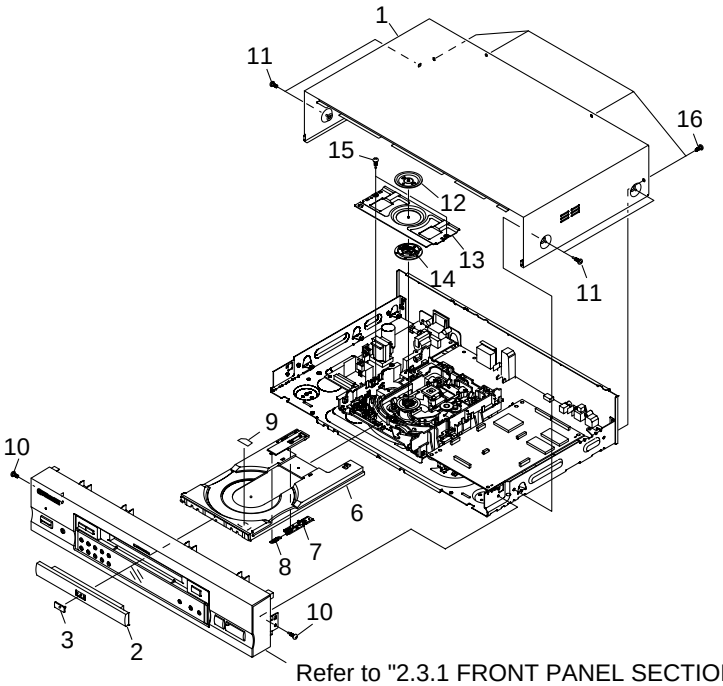


● PACKING PARTS LIST for DV-S5

Mark	No.	Description	Part No.
	1	Instruction Manual (Traditional Chinese)	VRC1088
	2	•••••	
	3	Remote Control Unit (CU-DV025)	VXX2601
	4	Battery Cover	VNK4334
⚠	5	AC Power Cord	ADG7003
	6	Video Cord (L=1.5m)	VDE1048
	7	Audio Cord (L=1.5m)	VDE1033
NSP	8	Battery(R6P,AA)	VEM-013
	9	Polyethylene Bag	Z21-038
	10	Mirror Mat Sheet	VHL1012
	11	Protector A(Paper)	VHB1065
	12	Protector B(Paper)	VHB1066
	13	Packing Case	VHG1792

2.2 EXTERIOR SECTION

2.2.1 EXTERIOR SECTION for DV-05

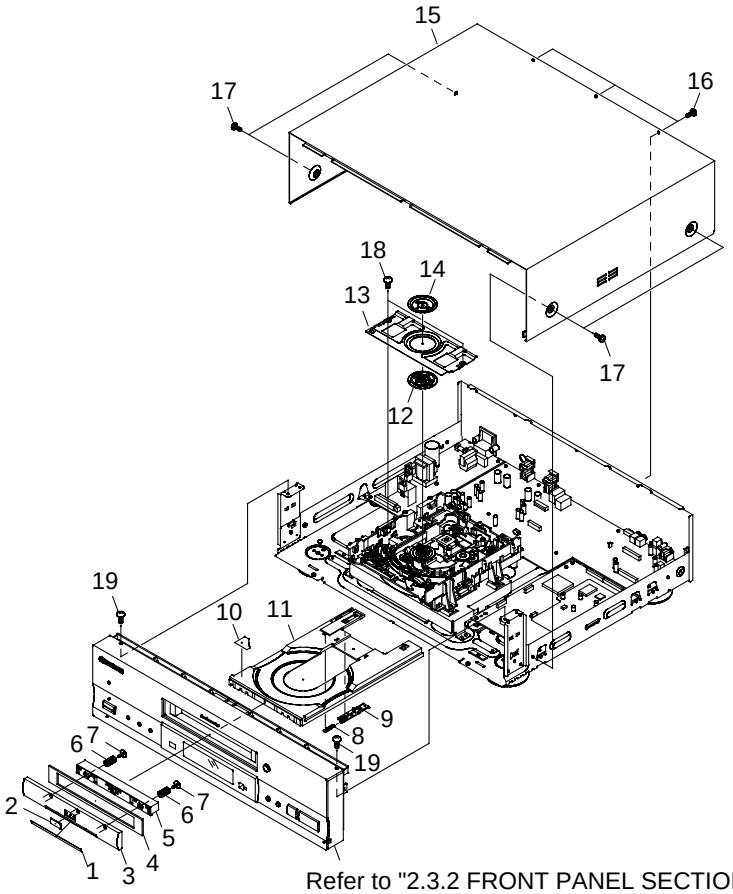


Refer to "2.3.1 FRONT PANEL SECTION"

● PARTS LIST for DV-05

Mark	No.	Description	Part No.
	1	Bonnet Case S	VXX2612
	2	Tray Panel	VNK4316
	3	DVD Plate	VAM1076
	4	•••••	
	5	•••••	
	6	Tray	VNL1731
	7	Tray Stopper	VNL1739
	8	Spring	VBH1277
	9	Tray Label	VRW1628
	10	Screw	IBZ30P080FMC
	11	Screw	BCZ40P060FZK
	12	Clamper Plate	VNE2068
	13	Bridge	VNE2069
	14	Clamper	VNL1738
	15	Screw	BPZ26P080FZK
	16	Screw	BBZ30P080FMC
	17	65 Label	ORW1069

2.2.2 EXTERIOR SECTION for DV-S5



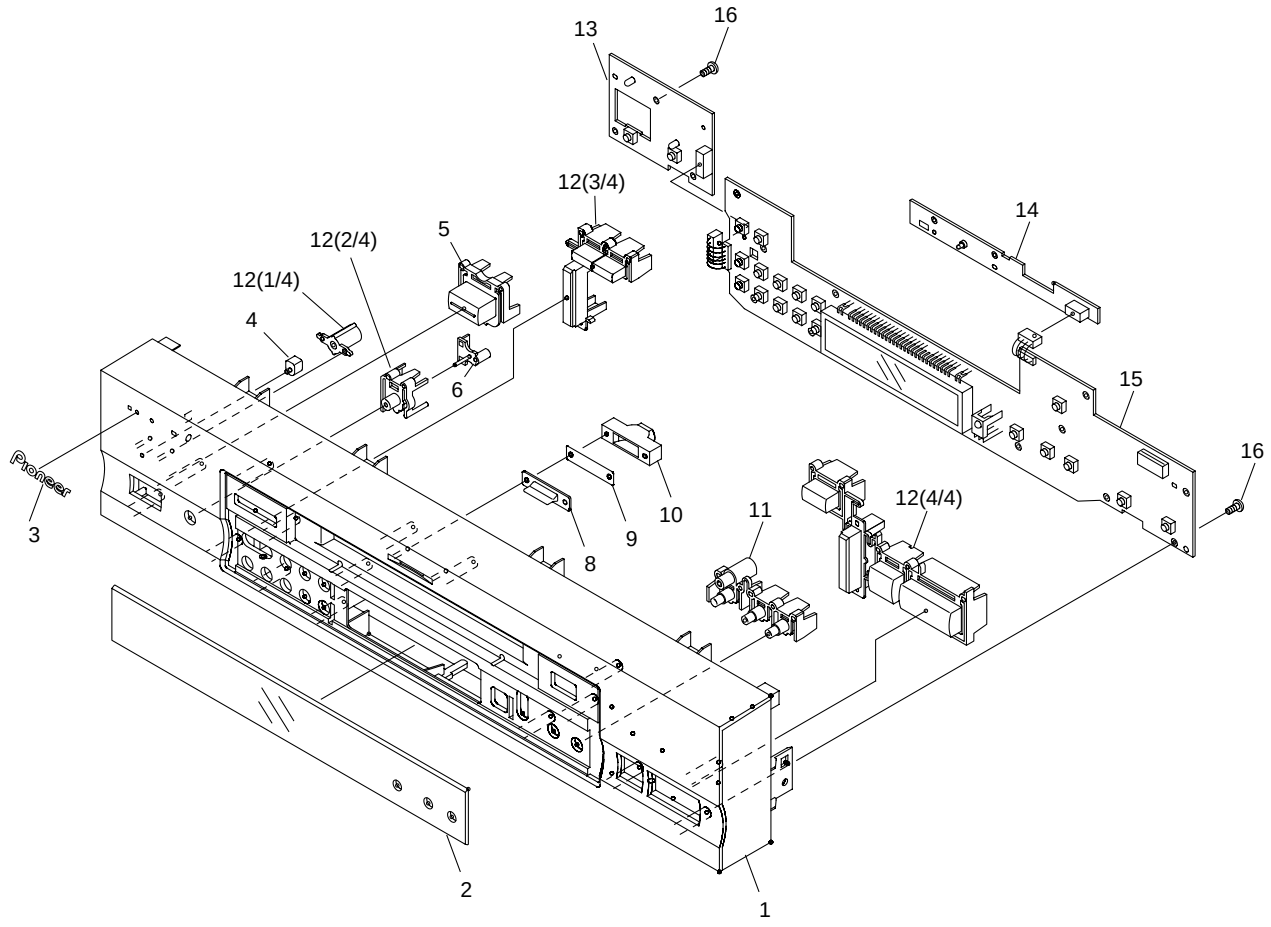
Refer to "2.3.2 FRONT PANEL SECTION"

● PARTS LIST for DV-S5

Mark	No.	Description	Part No.
	1	Door Plate	VAH1312
	2	DVD Plate	VAM1077
	3	Door Panel	VNK4324
	4	Door Cushion	VEC2008
	5	Door Holder	VNK4325
	6	Door Spring	VBH1305
	7	Screw	VBA1057
	8	Spring	VBH1277
	9	Tray Stopper	VNL1739
	10	Label	VRW1628
	11	Tray	VNK4333
	12	Clamper	VNL1738
	13	Bridge	VNE2069
	14	Clamper Plate	VNE2068
	15	Bonnet Case S	VXX2617
	16	Screw	BBZ30P080FMC
	17	Screw	BCZ40P060FNI
	18	Screw	BPZ26P080FZK
	19	Screw	BBT30P080FCC

2.3 FRONT PANEL SECTION

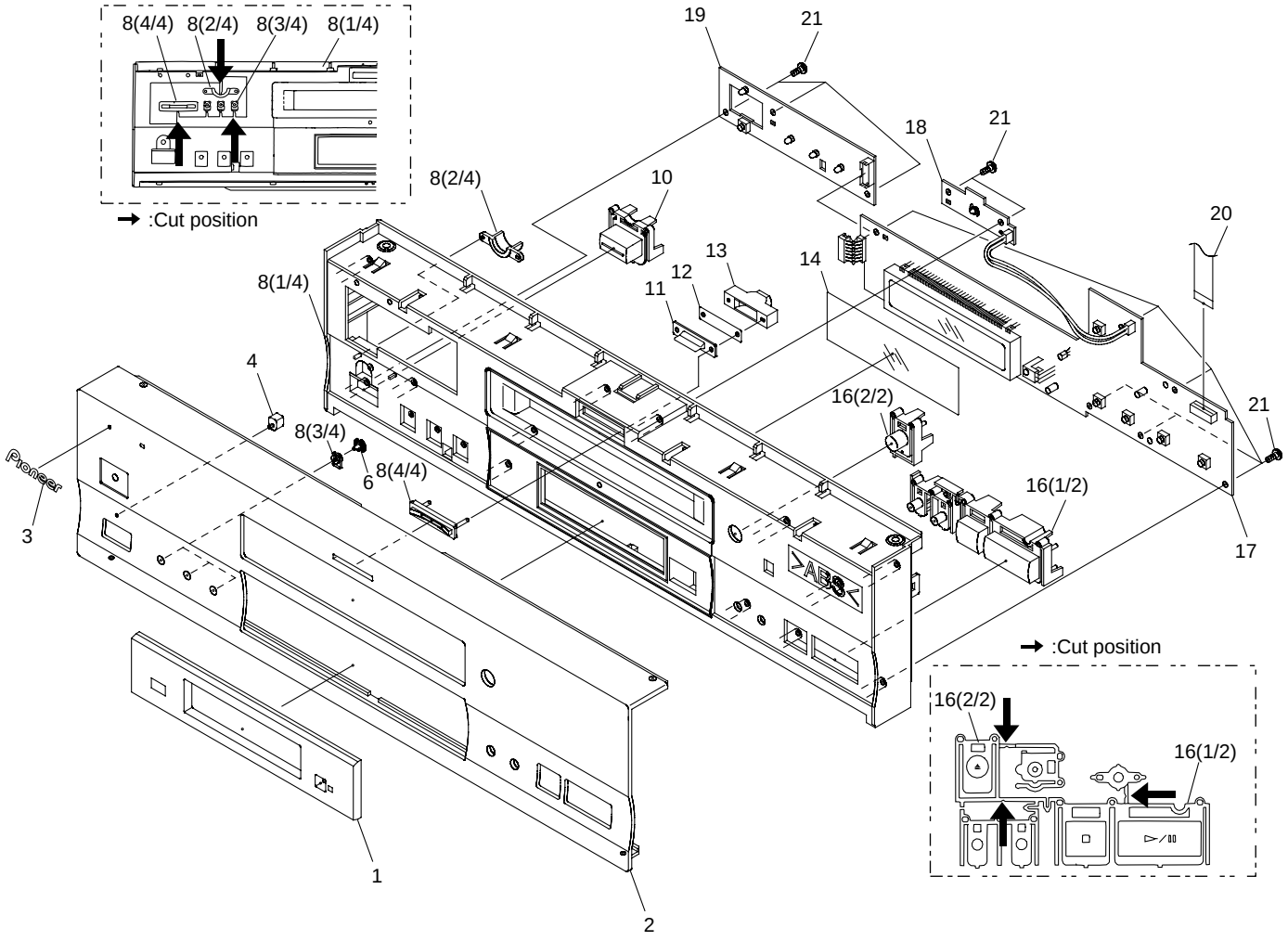
2.3.1 FRONT PANEL SECTION for DV-05



● FRONT PANEL SECTION PARTS LIST for DV-05

Mark	No.	Description	Part No.
	1	Front Panel	VNK4322
	2	FL Lens	VEC2043
	3	Name Plate	PAM1776
	4	LED Lens	PNW2019
	5	PW Button	VNK4101
	6	PLAY Lens	RNK2232
	7	●●●●●	
	8	Illumination Lens	VNK4168
	9	Illumination Filter	VEC1950
	10	Illumination Holder	VNK4098
	11	Skip Key	VNK4313
	12	Main Key	VNK4317
NSP	13	PWSB Assy	VWG1981
NSP	14	DILB Assy	VWG1989
	15	FLKY Assy	VWG1978
	16	Screw	BBZ30P080FMC

2.3.2 FRONT PANEL SECTION for DV-S5

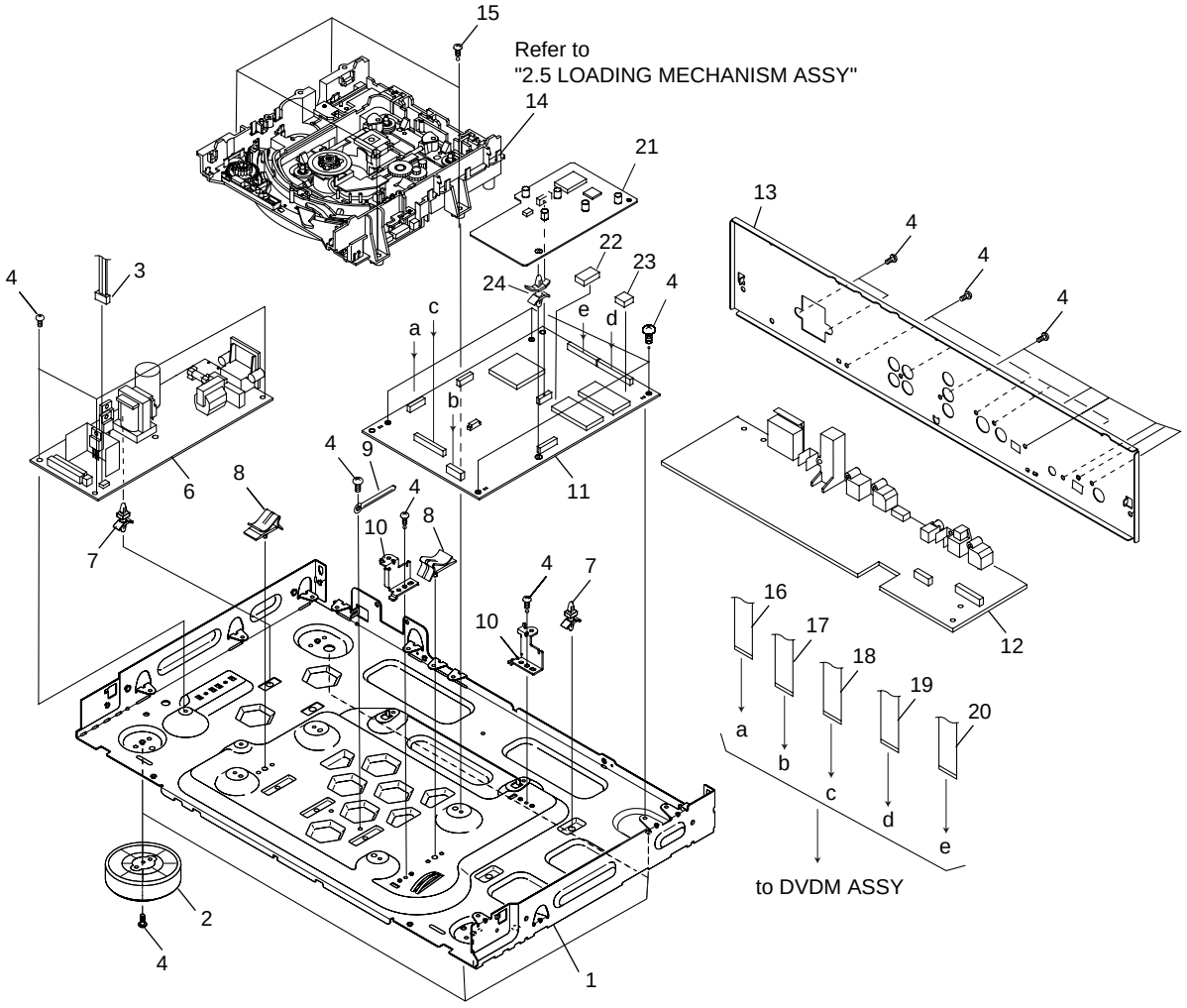


● FRONT PANEL SECTION PARTS LIST for DV-S5

Mark	No.	Description	Part No.
	1	FL Lens	VEC2007
	2	Front Almi	VAH1293
	3	Name Plate G	PAN1377
	4	LED Lens	PNW2019
	5	•••••	
	6	LED Lens	VNK4326
	7	•••••	
	8	Panel Base	VNK4323
	9	•••••	
	10	PW Button	VNK4059
	11	Illumination Lens	VNK4168
	12	Illumination Filter	VEC1950
	13	Illumi Holder	VNK4098
	14	FL Filter	VEC2016
	15	•••••	
	16	Main Key	VNK4095
	17	FLKY Assy	VWG1977
NSP	18	DILB Assy	VWG1991
NSP	19	PWSB Assy	VWG1987
	20	Flexible Cable	VDA1690
	21	Screw	BBZ30P080FMC

2.4 BOTTOM SECTION

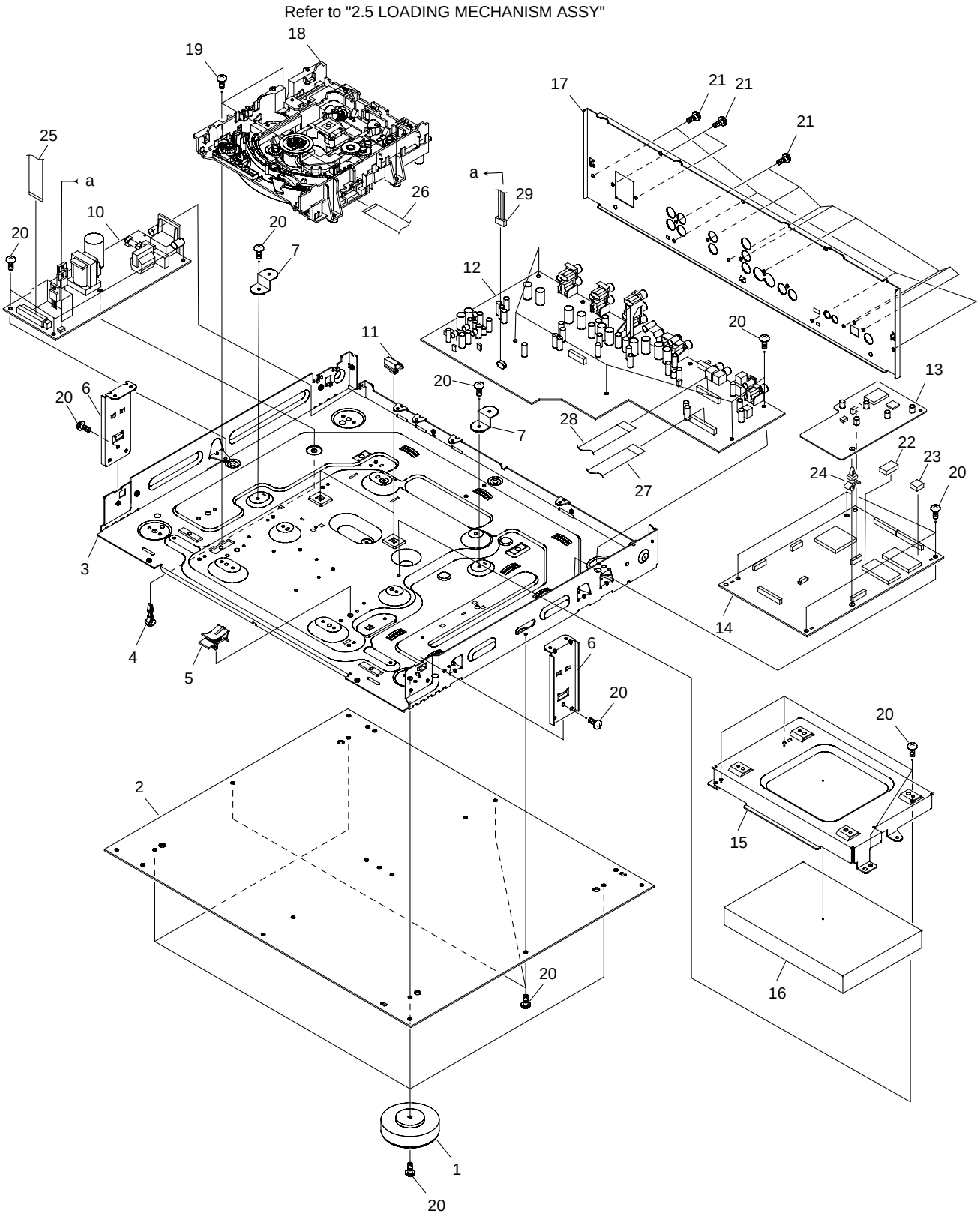
2.4.1 BOTTOM SECTION for DV-05



● BOTTOM VIEW SECTION PARTS LIST for DV-05

Mark	No.	Description	Part No.
NSP	1	Base Chassis	VNA1981
	2	Insulator	PNW2766
	3	Connector assy	PF02PP-S17
	4	Screw	BBZ30P080FMC
	5	•••••	
⚠	6	POWER SUPPLY Assy	VWR1305
NSP	7	PCB Holder	PNW2100
	8	Flat Cable Clip	VEC2018
NSP	9	Cord Stopper	ZCB-069Z
NSP	10	PCB Holder	VNE2122
	11	DVDM Assy	VWS1349
	12	AVJB Assy	VWV1621
	13	Rear Panel	VNA2002
NSP	14	Loading Mechanism Assy	VWT1157
	15	Screw	BBZ30P100FMC
	16	Flexible Cable (12P) (LOSB CN305 – DVDM CN1030)	VDA1692
	17	Flexible Cable (14P) (FLKY CN101 – DVDM CN602)	VDA1690
	18	Flexible Cable (26P) (POWER SUPPLY CN103 – DVDM CN110)	VDA1689
	19	Flexible Cable (26P) (AVJB CN101 – DVDM CN9020)	VDA1695
	20	Flexible Cable (22P) (AVJB CN202 – DVDM CN9030)	VDA1696
	21	DNRB Assy	VWV1619
NSP	22	PC Support Cushion	VEC2033
NSP	23	PC Support Spacer	VEC2032
	24	PC Support	DEC1932

2.4.2 BOTTOM SECTION for DV-S5

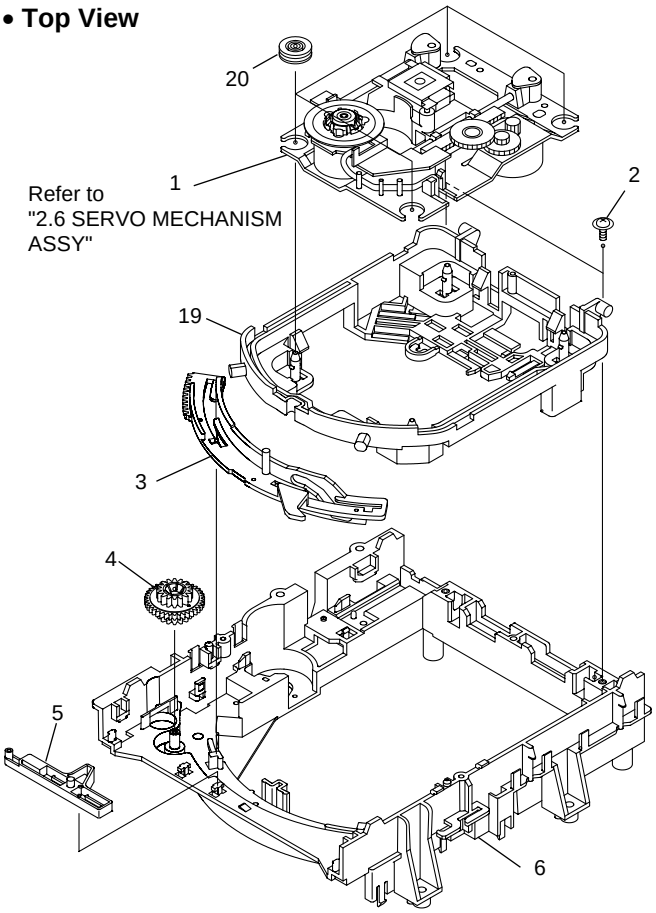


● BOTTOM SECTION PARTS LIST for DV-S5

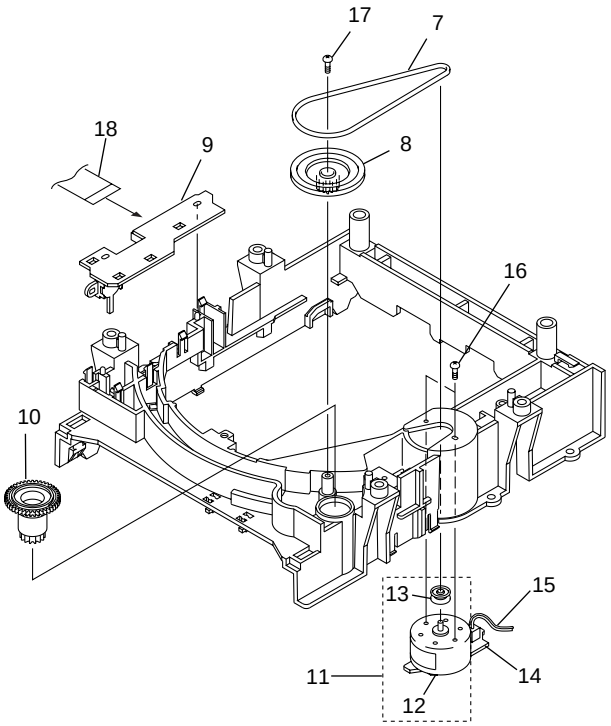
Mark	No.	Description	Part No.
	1	Insulator	PNW2766
NSP	2	Bottom Plate	PNA2376
NSP	3	Chassis	VNA1979
NSP	4	PCB Holder	PNW2029
	5	Flat Cable Clip	VEC2018
NSP	6	Panel Stay	VNE2156
NSP	7	PCB Base	RNE1221
	8	•••••	
	9	•••••	
⚠	10	Power Supply Unit	VWR1305
NSP	11	P Plate Holder	PNY-405
	12	AVJB Assy	VWV1646
	13	DNRB Assy	VWV1619
	14	DVDM Assy	VWS1349
NSP	15	Mecha Holder	VNE2157
	16	Mecha Cushion	VEC2011
	17	Rear Panel	VNA2053
NSP	18	Loading Mecha. Assy	VWT1157
	19	Screw	BBZ30P100FMC
	20	Screw	ABZ30P080FCC
	21	Screw	BBZ30P080FMC
NSP	22	PC Support Cushion	VEC2033
NSP	23	PC Support Spacer	VEC2032
	24	PC Suppor	DEC1932
	25	Flexible Cable (26P)	VDA1688
	26	Flexible Cable (12P)	VDA1692
	27	Flexible Cable (26P)	VDA1694
	28	Flexible Cable (22P)	VDA1696
	29	Connector Assy	PF02PP-S20

2.5 LOADING MECHANISM ASSY

• **Top View**



• **Bottom View**



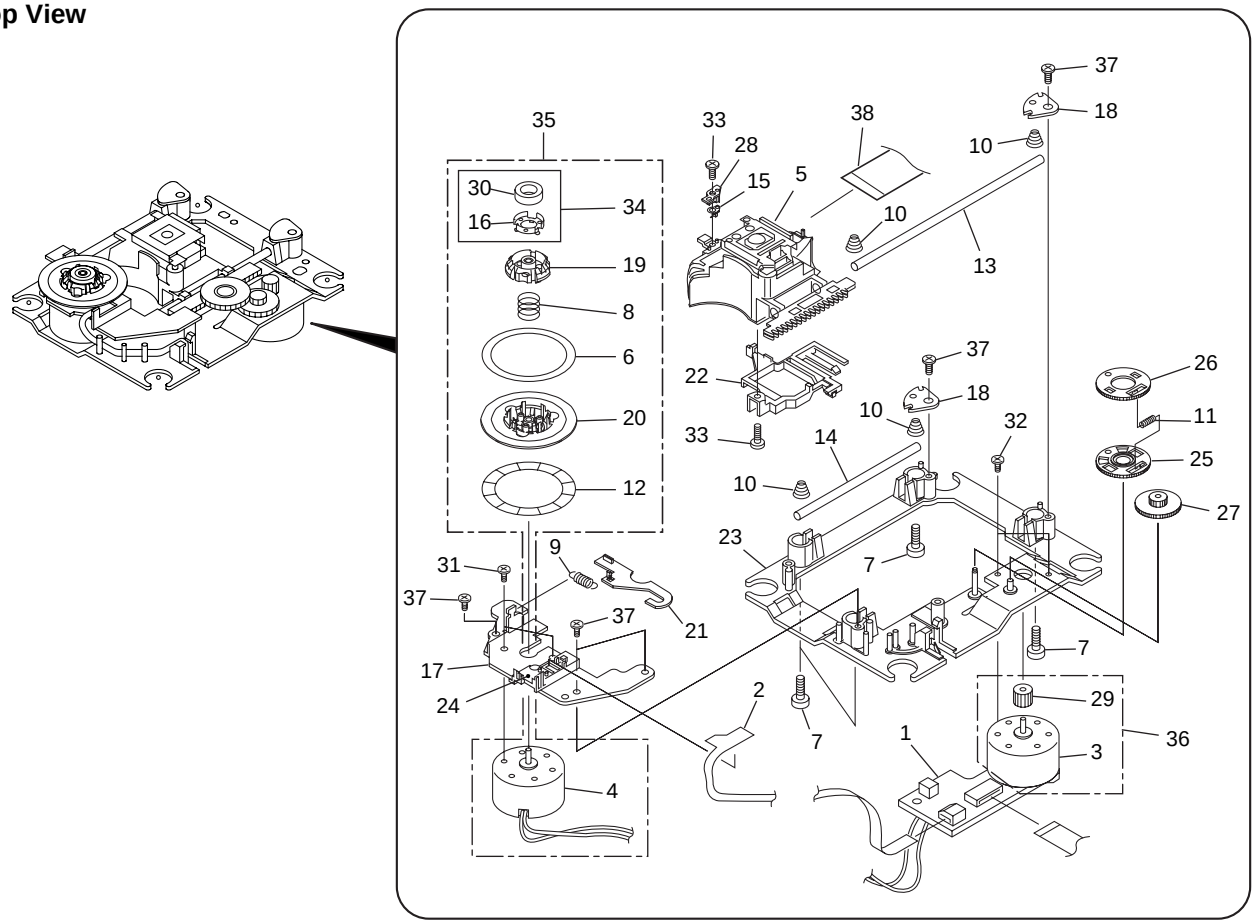
● LOADING MECHANISM ASSY PARTS LIST

Mark	No.	Description	Part No.
	1	Servo Mechanism Assy-S	VXX2606
	2	Screw	DBA1006
	3	Drive Cam	VNL1736
	4	Drive Gear	VNL1735
	5	Lock Plate	VNL1820
	6	Loading Base	VNL1730
	7	Belt	VEB1260
	8	Gear Pulley	VNL1733
NSP	9	LOSB Assy	VWG1885
	10	Loading Gear	VNL1734

Mark	No.	Description	Part No.
	11	Loading Motor Assy	VXX2505
	12	DC Motor / 0.3W	PXM1027
	13	Motor Pulley	PNW1634
NSP	14	LOMB Assy	VWG1886
	15	Connector Assy (LOMB CN401 – LOSB CN306)	VKP2184
	16	Screw	VBA1055
	17	Screw	Z39-019
	18	Flexible Cable (08P) (LOSB CN303 – SMEB CN202)	VDA1698
	19	Float Base	VNL1815
	20	Floating Rubber	VEB1286

2.6 SERVO MECHANISM ASSY

• **Top View**

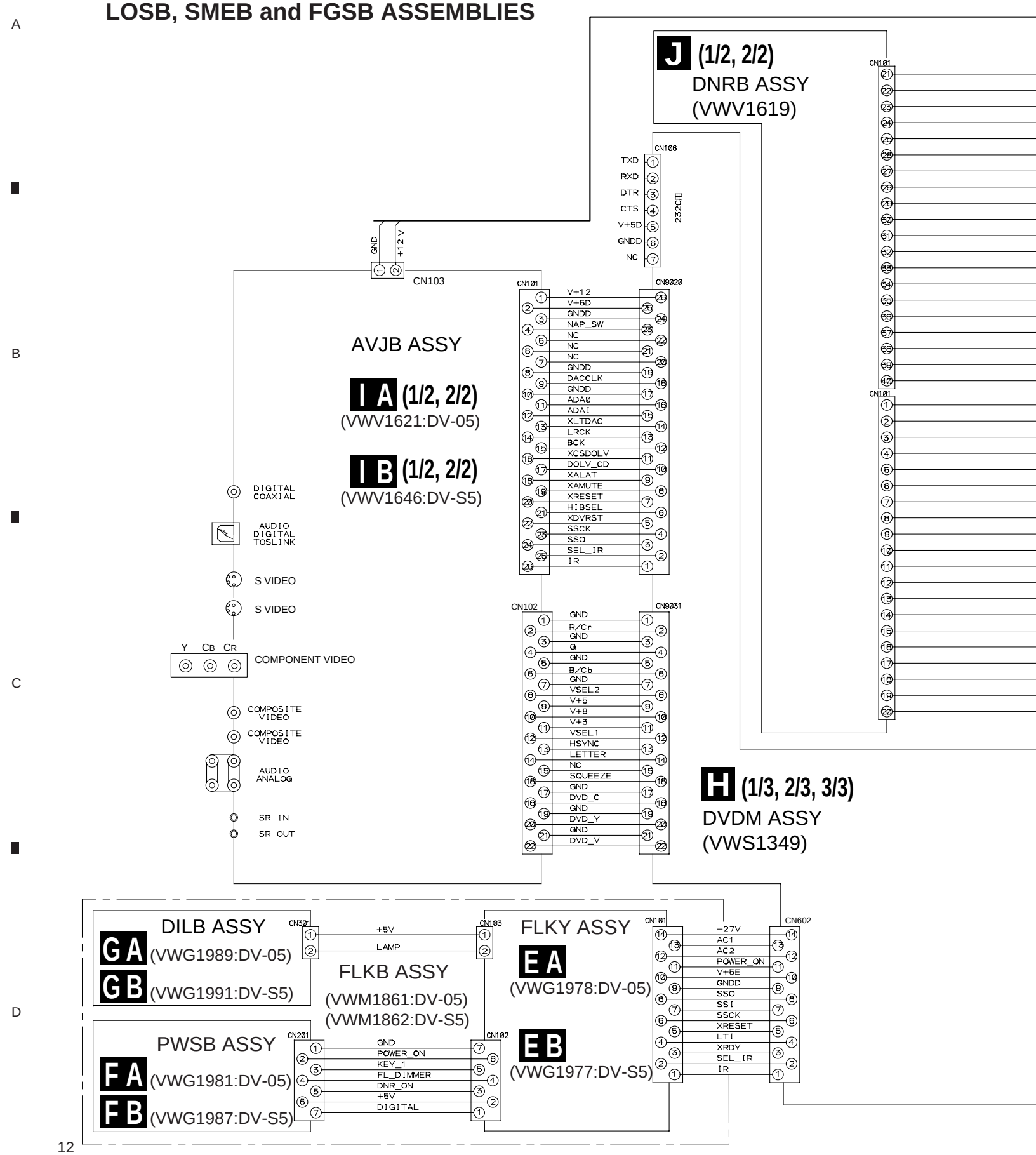


● SERVO MECHANISM ASSY PARTS LIST

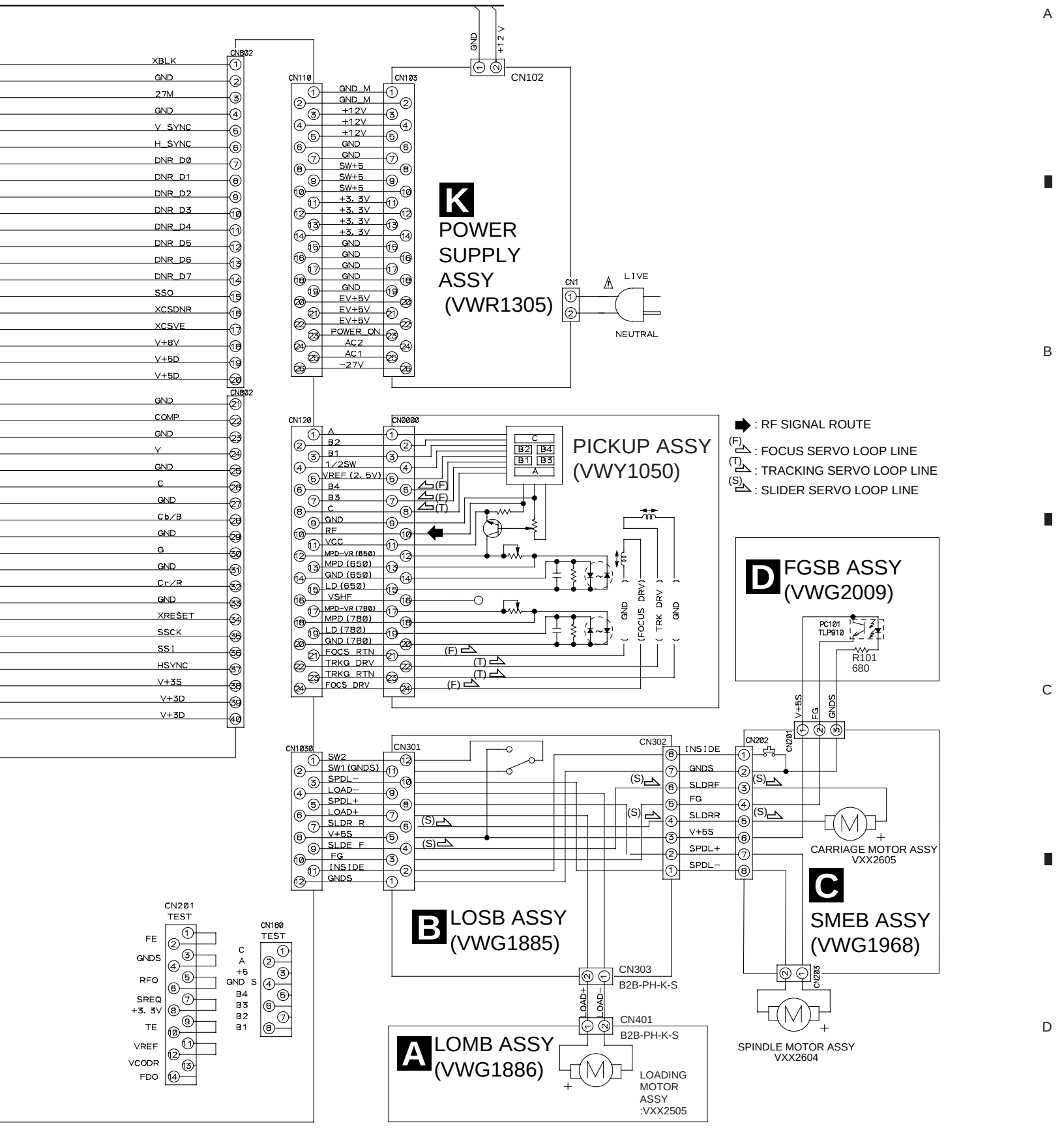
Mark	No.	Description	Part No.
NSP	1	SMEB Assy	VWG1968
NSP	2	FGSB Assy	VWG2009
	3	Motor	VXM1074
	4	Motor	VXM1075
⚠	5	Pickup Assy	VWY1050
	6	Table Sheet	DEC2040
	7	Screw	VBA1058
	8	Centering Spring	VBH1278
	9	Hook Spring	VBH1291
	10	Skew Spring	VBH1303
	11	Gear Spring	VBH1308
NSP	12	Reflected Sheet	VEC1959
	13	Guide Bar	VLL1504
	14	Sub-guide Bar	VLL1505
	15	Hold Spring	VNC1017
NSP	16	Magnet Holder	VNE2070
NSP	17	Motor Base	VNE2154
NSP	18	Cover	VNE2155
	19	Centering Ring	VNL1746
NSP	20	Disc Table	VNL1747
	21	Hook	VNL1770
	22	FFC Holder	VNL1802
	23	Mechanism Base	VNL1806
	24	FG Holder	VNL1807
	25	Gear A	VNL1808
	26	Gear B	VNL1809
	27	Gear C	VNL1810
	28	Slider	VNL1811
	29	Gear D	VNL1814
NSP	30	Magnet	VYM1024
	31	Screw	JFZ17P025FZK
	32	Screw	JGZ17P028FMC
	33	Screw	VBA1051
	34	Magnet Holder Assy	VXX2507
	35	Spindle Motor Assy	VXX2604
	36	Carriage Motor Assy	VXX2605
	37	Screw	PBA1069
	38	Flexible Cable (24P) (DVDM CN120 – Pickup Assy)	VDA1701

3. SCHEMATIC DIAGRAM

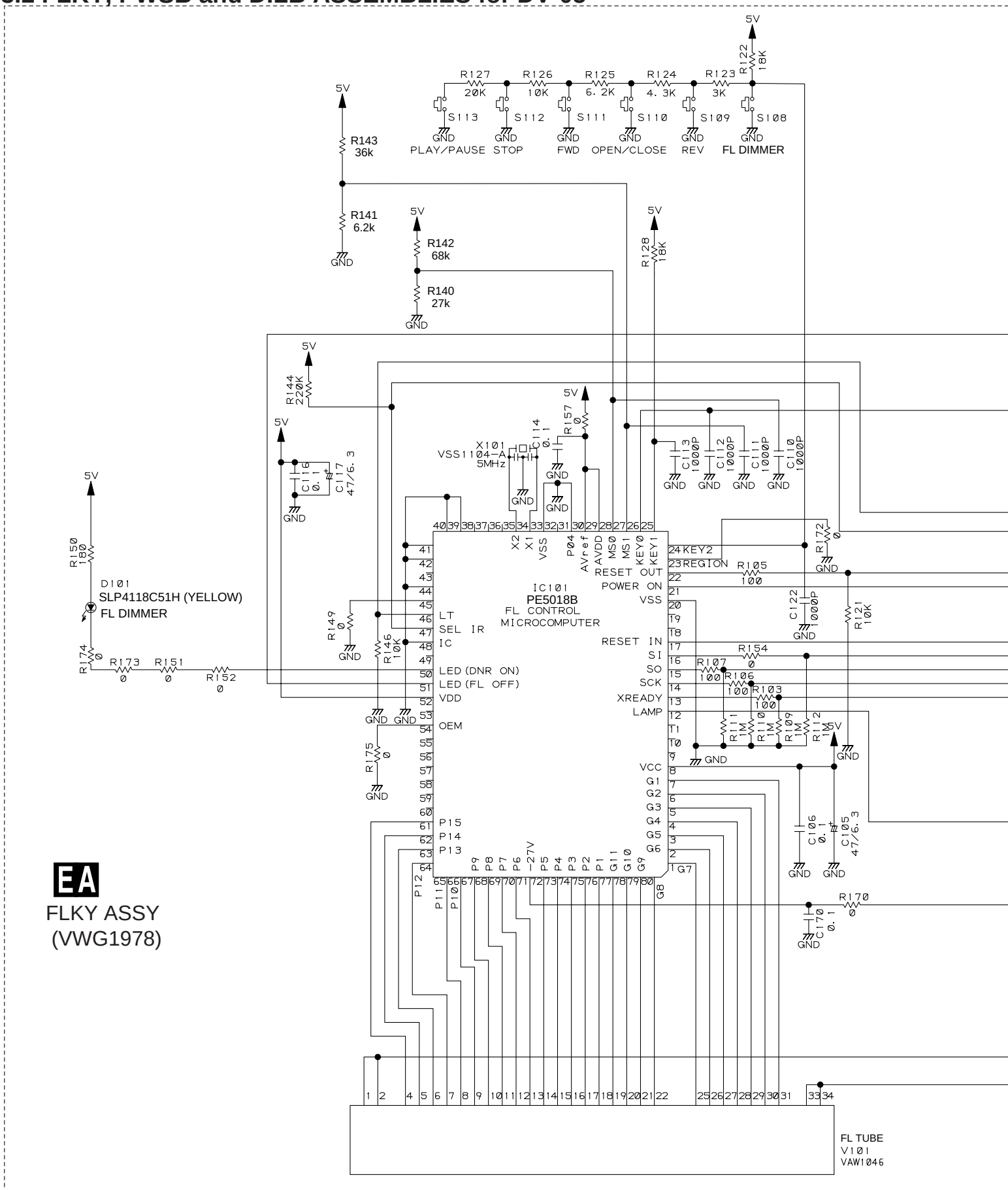
3.1 OVERALL CONNECTION DIAGRAM, LOMB, LOSB, SMEB and FGSB ASSEMBLIES



Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

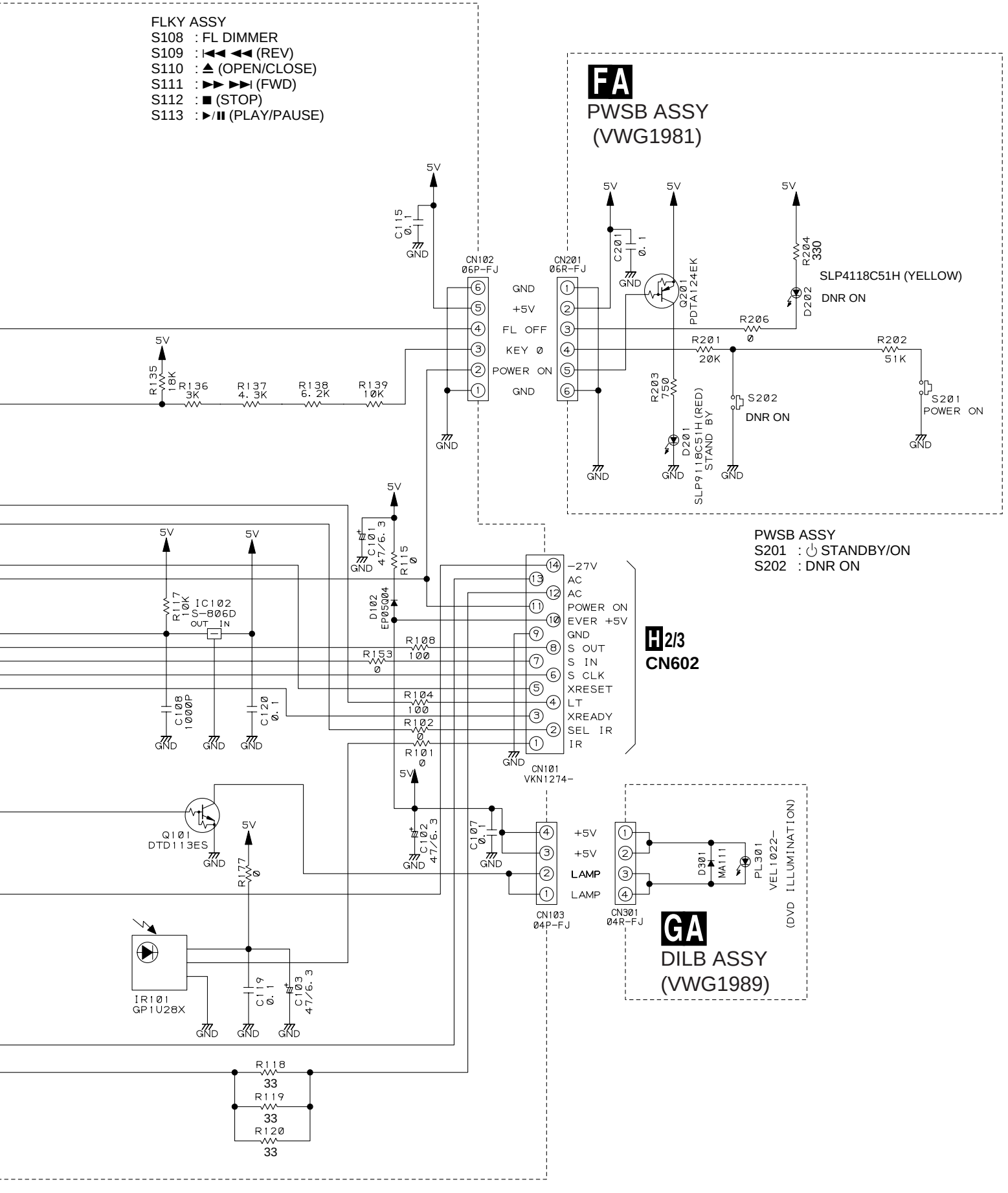


3.2 FLKY, PWSB and DILB ASSEMBLIES for DV-05



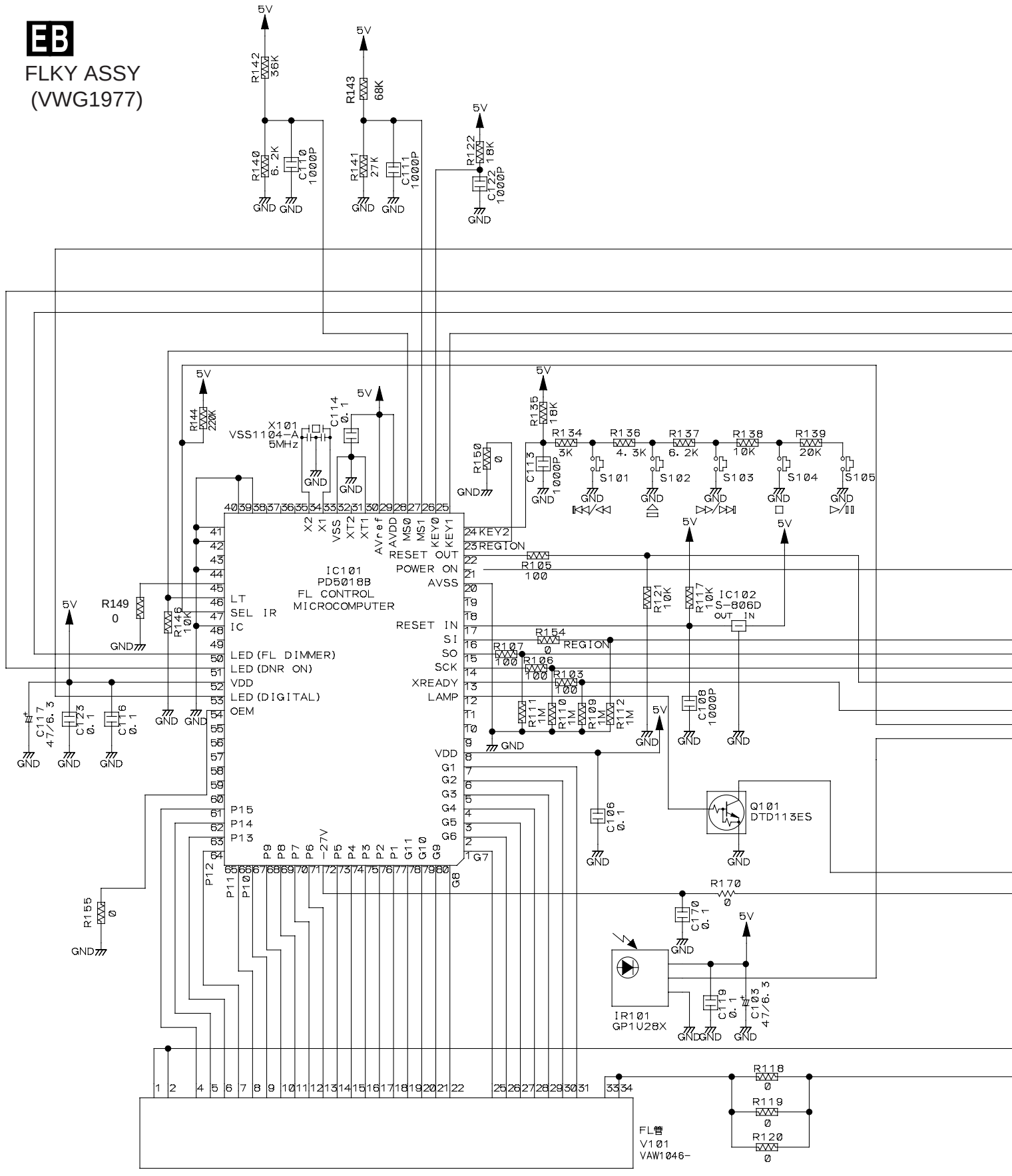
EA

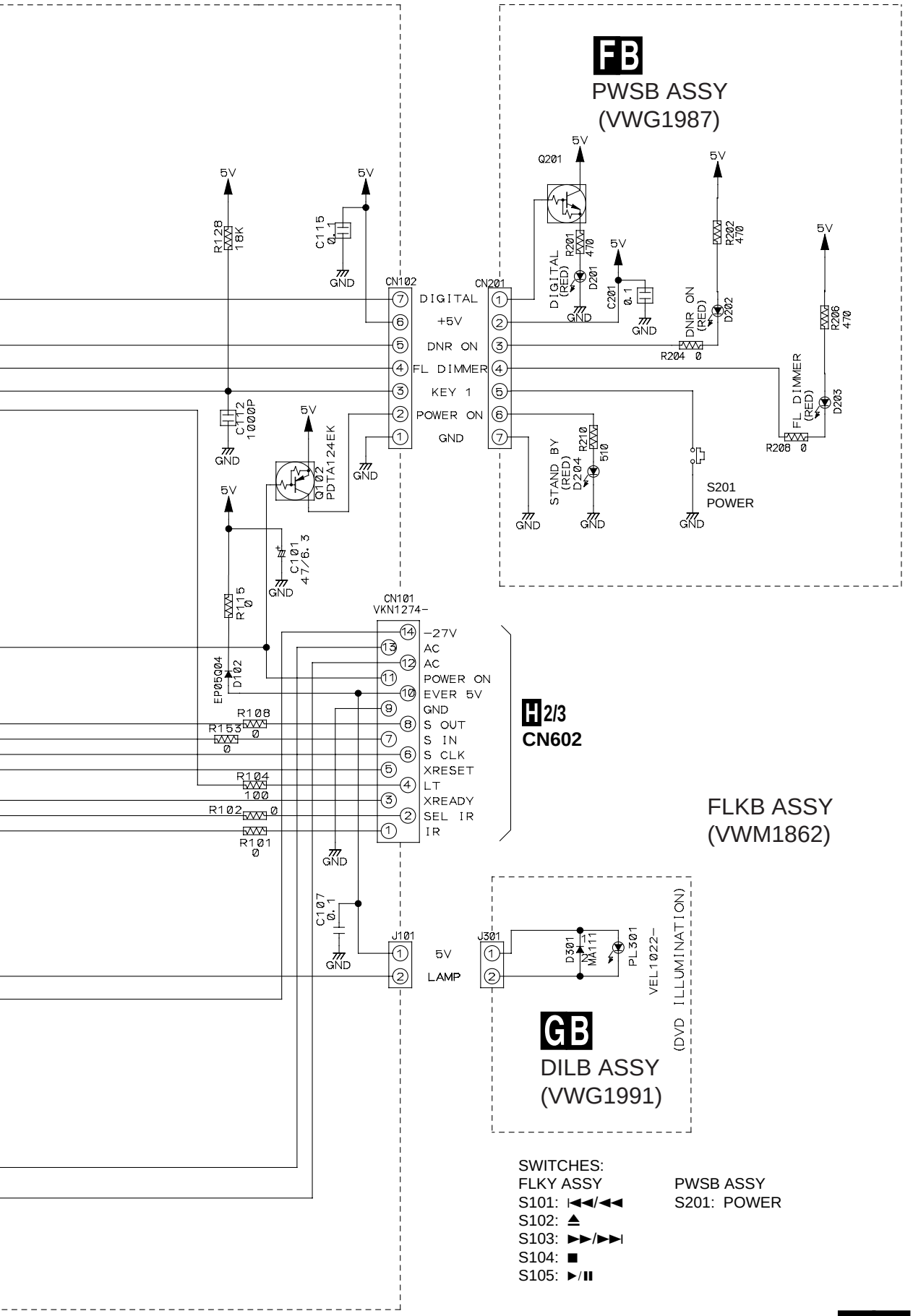
FLKY ASSY
(VWG1978)


FLKY ASSY
S108 : FL DIMMER
S109 : I◄◄ ◄◄ (REV)
S110 : ▲ (OPEN/CLOSE)
S111 : ►► ►►I (FWD)
S112 : ■ (STOP)
S113 : ►/II (PLAY/PAUSE)
FA
PWSB ASSY
(VWG1981)
CN102 06P-FJ
CN201 06R-FJ
GND
+5V
FL OFF
KEY 0
POWER ON
GND
SLP4118C51H (YELLOW)
D202 DNR ON
S202 DNR ON
S201 POWER ON
D201 SLP9118C51H(RED) STAND BY
PWSB ASSY
S201 : ⏻ STANDBY/ON
S202 : DNR ON
IC102 IS-806D
CN101 VKN1274-
-27V
AC
AC
POWER ON
EVER +5V
GND
S OUT
S IN
S CLK
XRESET
LT
XREADY
SEL IR
IR
H 2/3
CN602
Q101 DTD113ES
IR101 GP1U28X
CN103 04P-FJ
CN301 04R-FJ
LAMP
LAMP
D301 MA111
PL301 VEL1022- (DVD ILLUMINATION)
GA
DILB ASSY
(VWG1989)

3.3 FLKY, PWSB and DILB ASSEMBLIES for DV-S5

FLKY ASSY
(VWG1977)

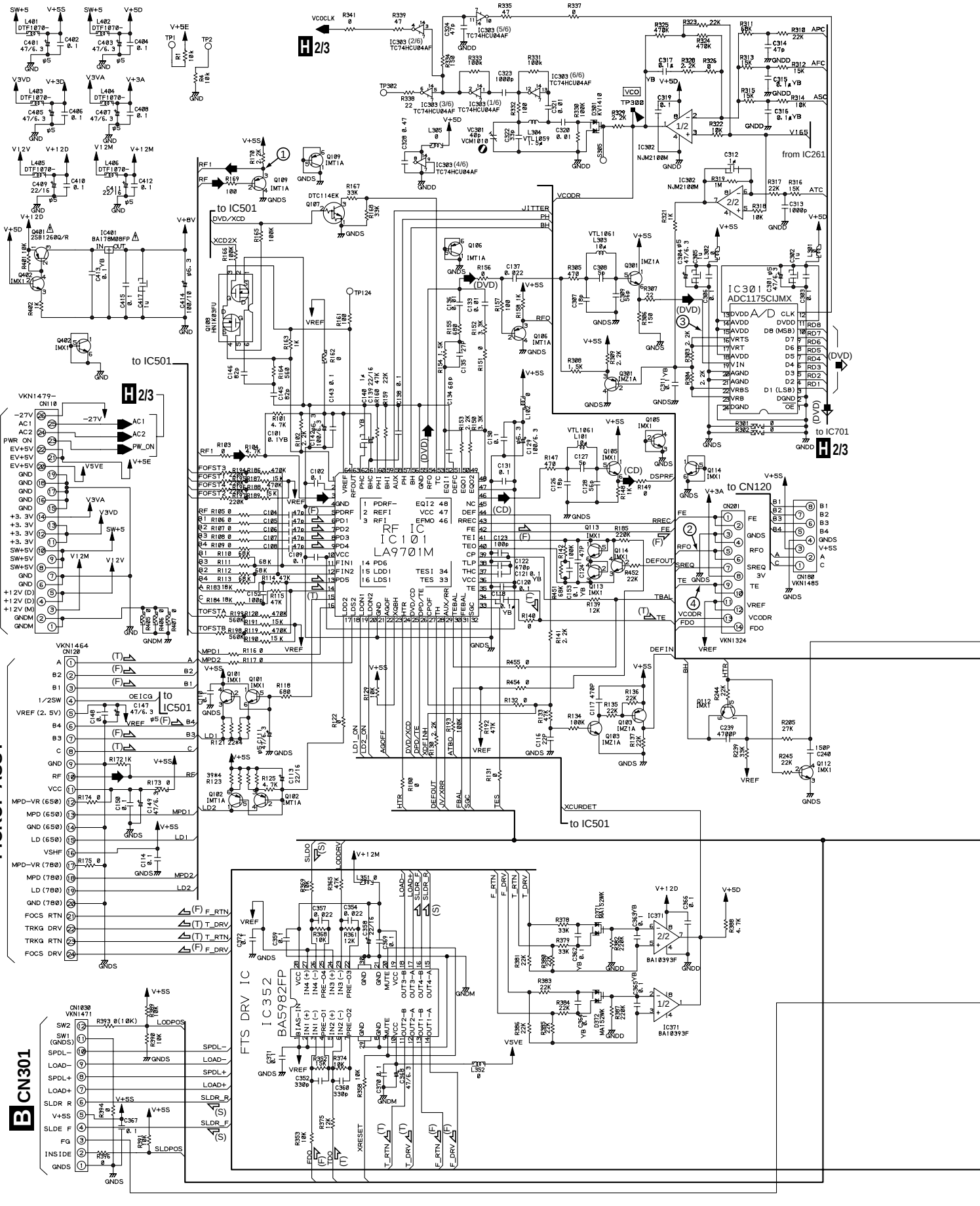




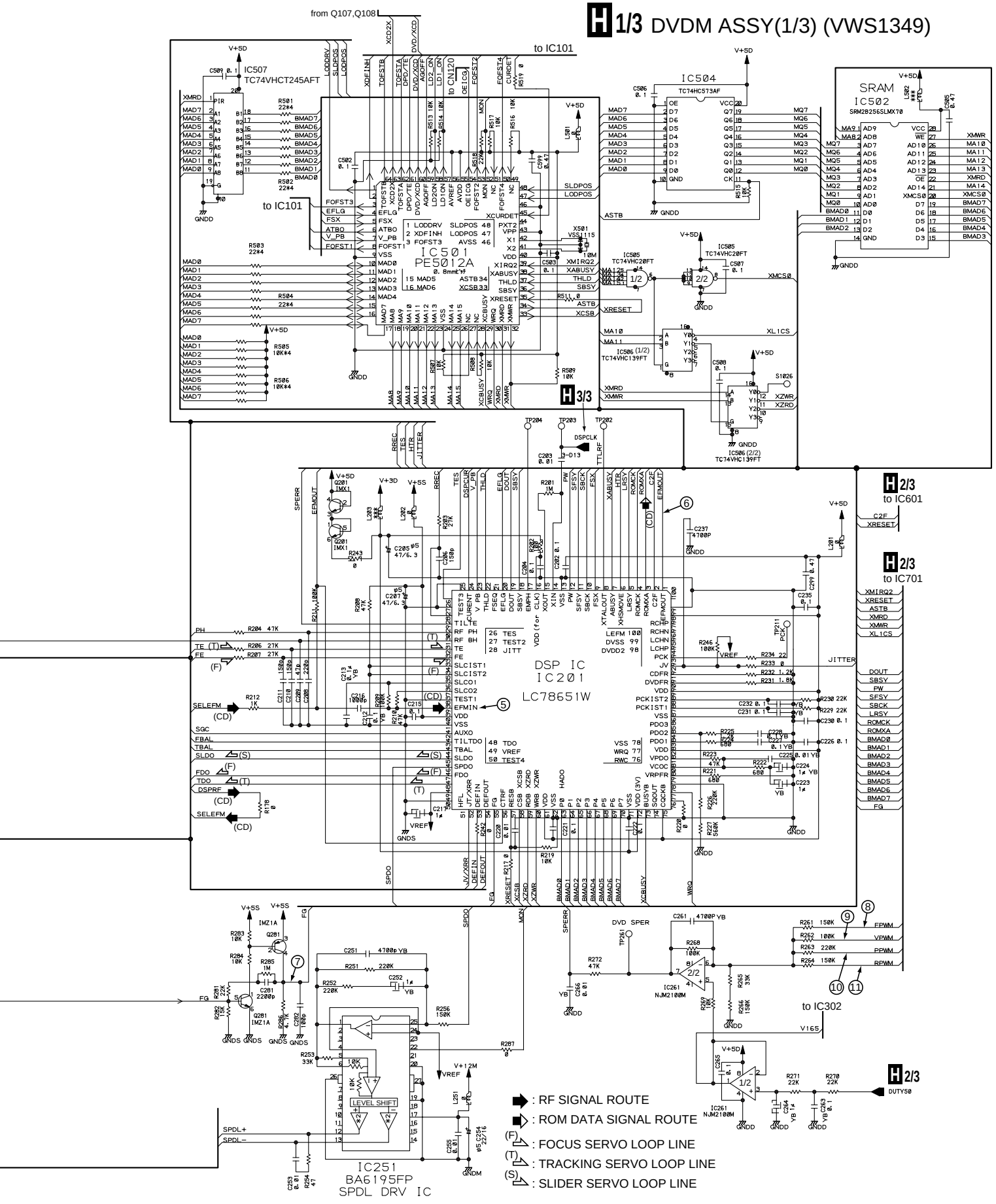
SWITCHES:

FLKY ASSY	PWSB ASSY
S101: ⏮/◀◀	S201: POWER
S102: ⏏	
S103: ▶▶/⏭	
S104: ■	
S105: ▶/⏸	

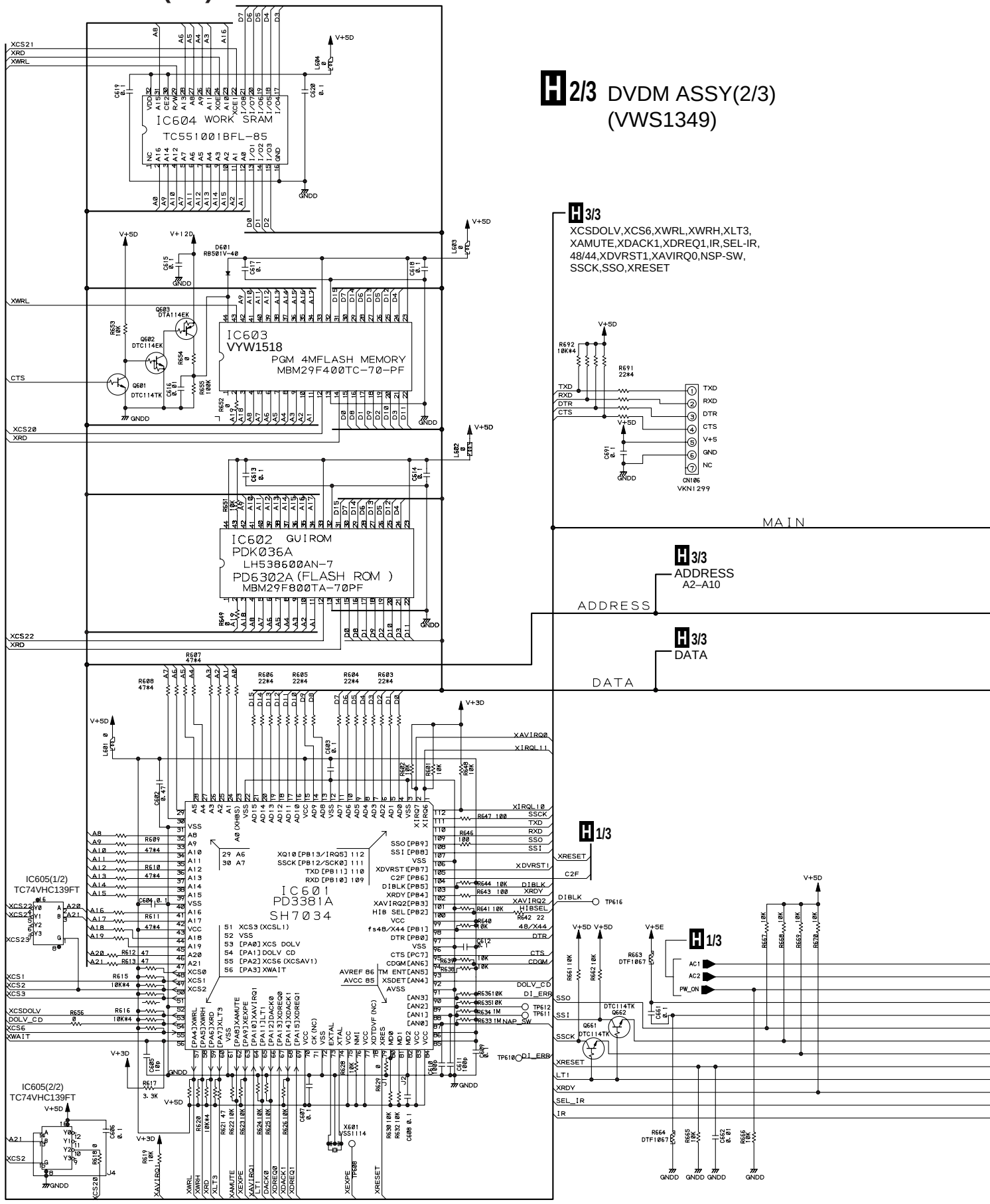
3.4 DVDM ASSY (1/3)

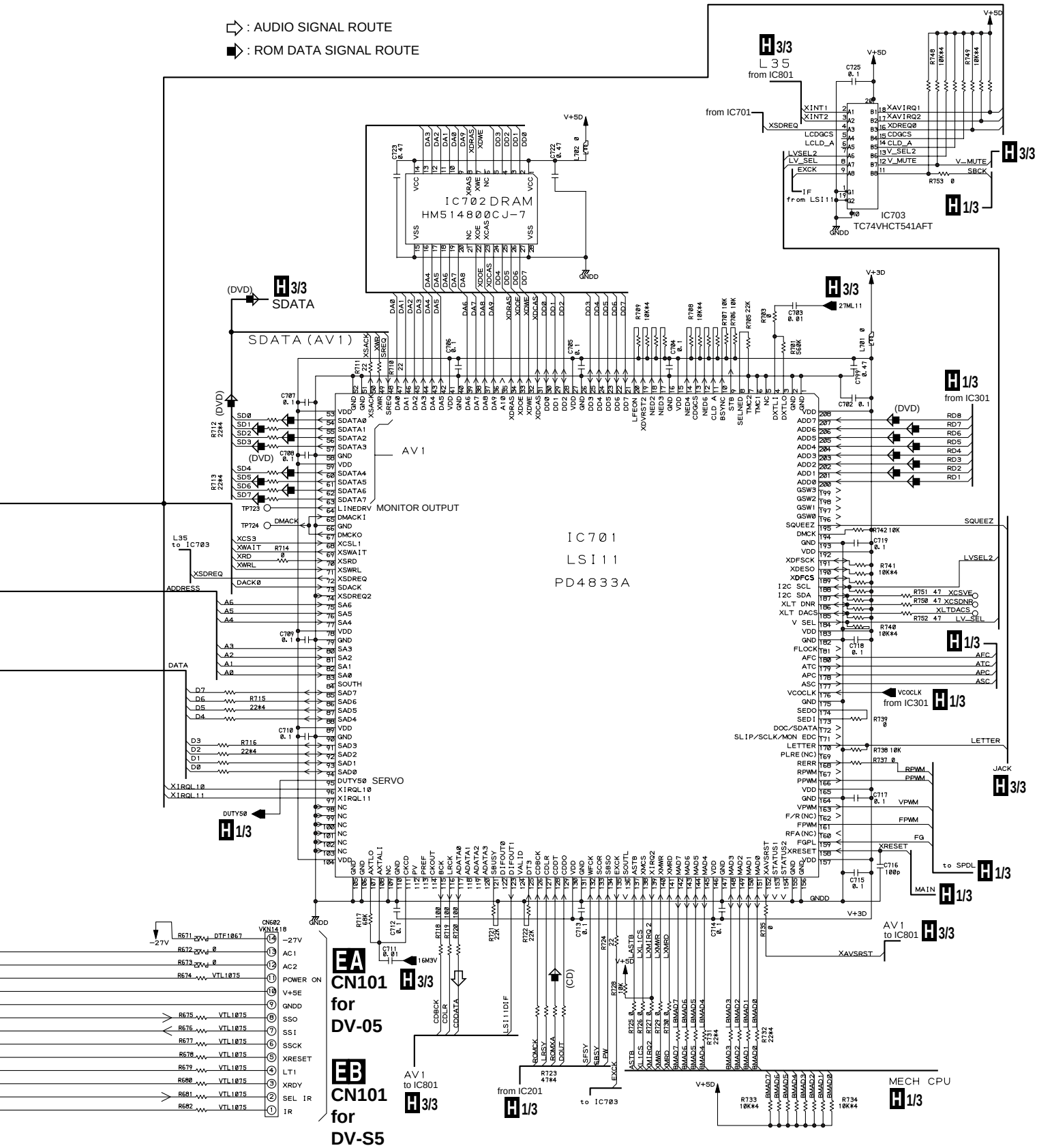


H 1/3 DVDM ASSY(1/3) (VWS1349)

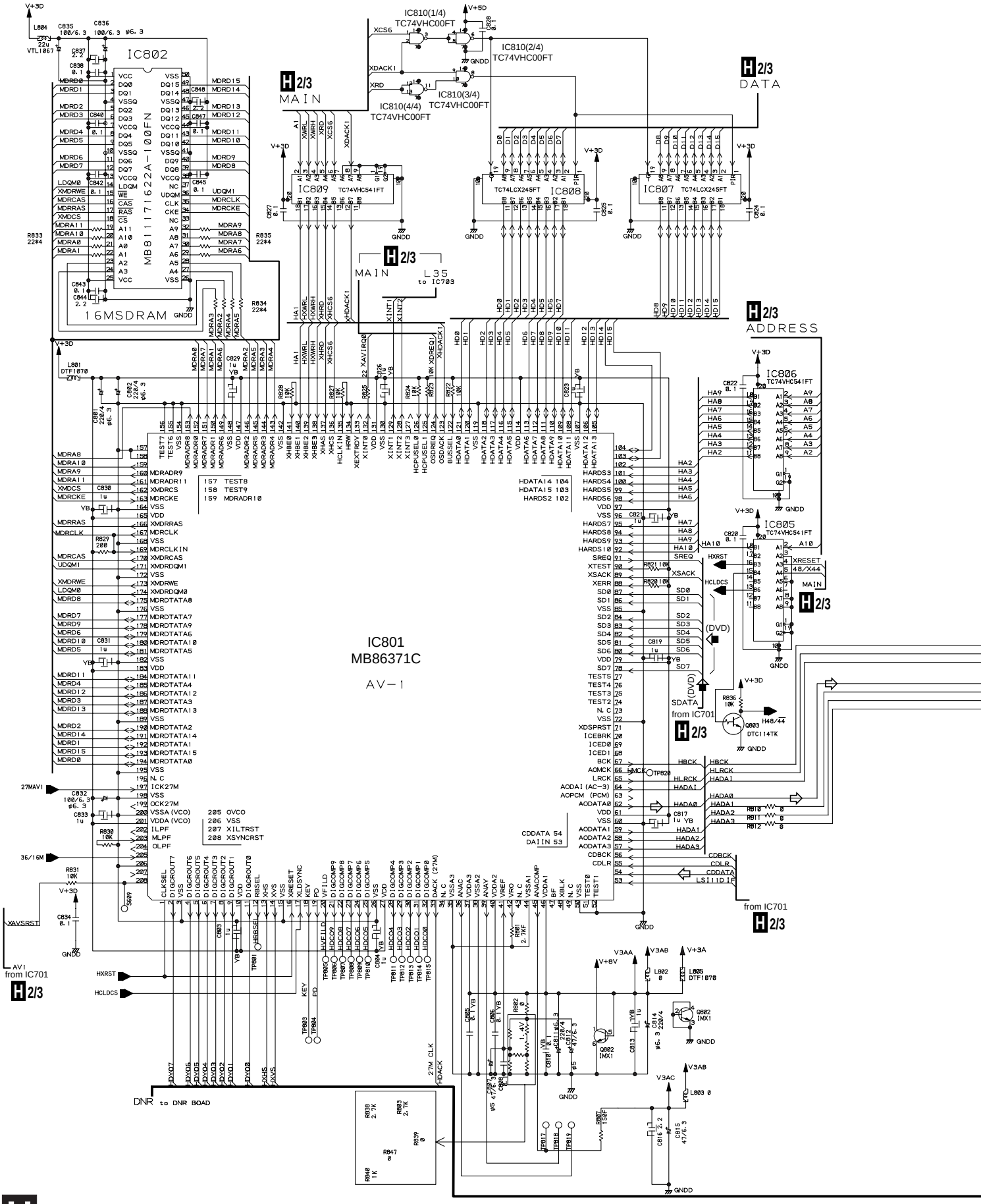


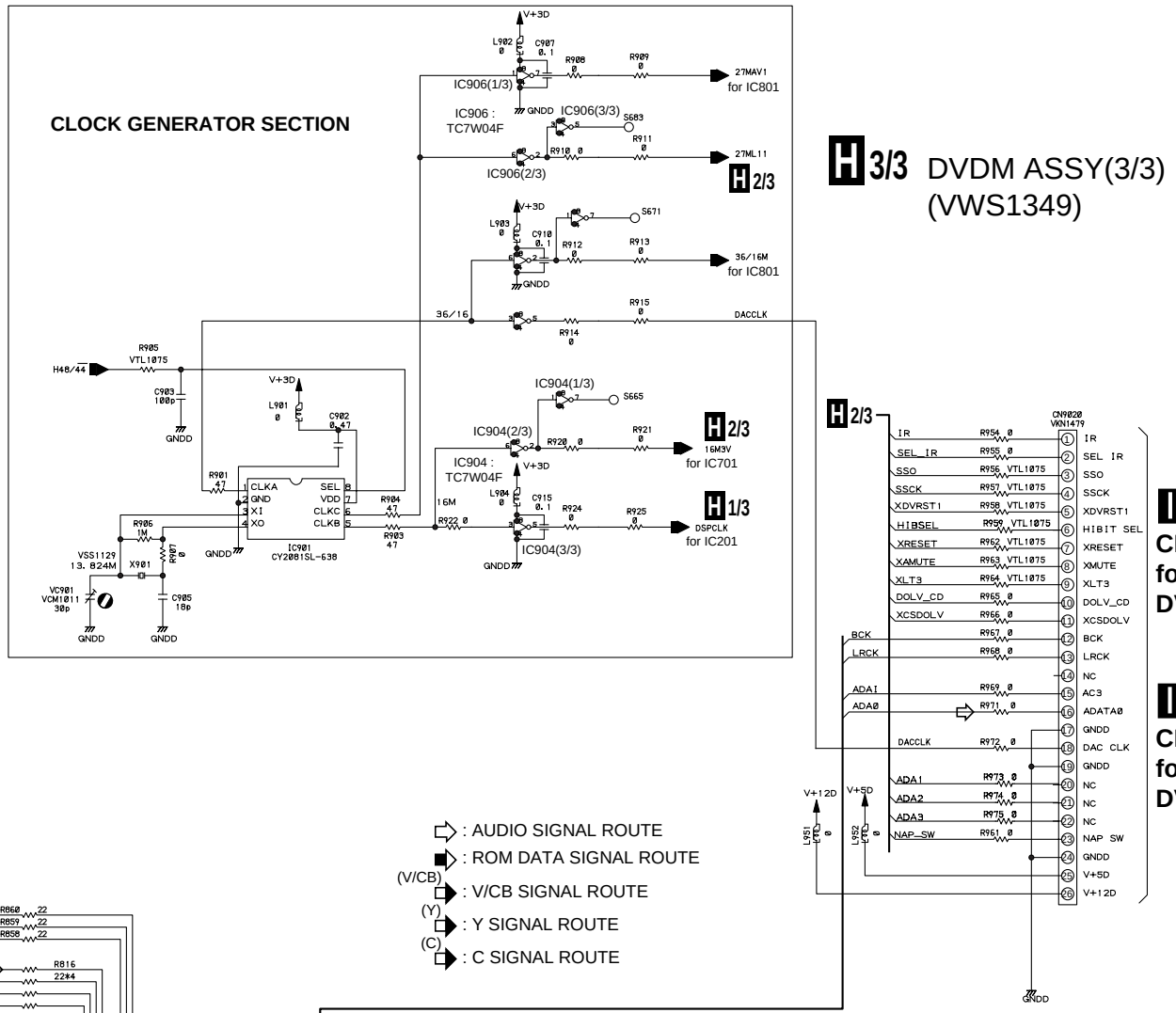
3.5 DVDM ASSY (2/3)




: AUDIO SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
IC702 DRAM
HM5148800CJ-7
IC703
TC74VHCT541AFT
IC701
LSI11
PD4833A
SDATA (AV1)
AV1
MONITOR OUTPUT
SERVO
MECH CPU
EA
CN101
for
DV-05
EB
CN101
for
DV-S5
from IC801
from IC301
from IC701
from IC201
to IC703
to SPDL
MAIN
JACK
L35
from IC801
L35
to IC703
IF
from LSI11
H3/3
H1/3
H2/3

3.6 DVDM ASSY (3/3)



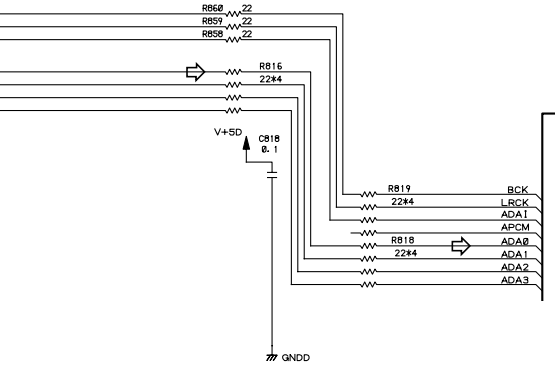


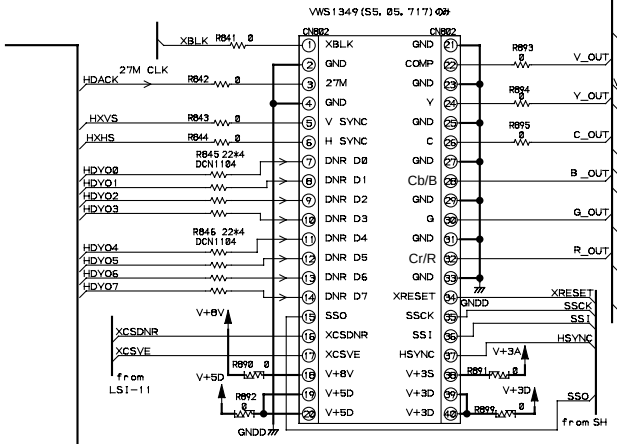
H 3/3 DVDM ASSY(3/3) (VWS1349)

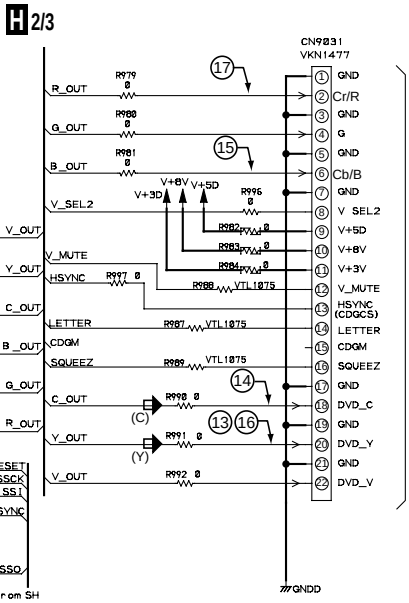
I A 1/2 CN101 for DV-05

I B 1/2 CN101 for DV-S5

: AUDIO SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
(V/CB) : V/CB SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE







I A 2/2 CN102 for DV-05

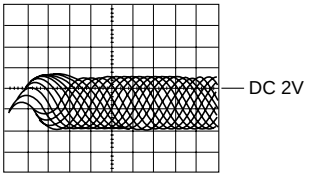
I B 2/2 CN102 for DV-S5

• WAVEFORMS OF DVDM ASSY

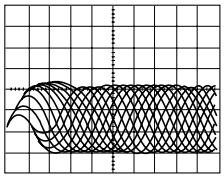
Note : No. in the table correspond to the number on the schematic diagram.

Measurement condition : No. 1 to 4 and 6 to 11 : Disc MJK1, Title 1-chp 1
No. 5 : CD, ABEX-784 Track 1
No. 13 to 14 : MJK1, Title 1-chp 4
No. 15 to 17 : MJK1, Title 1-chp 5

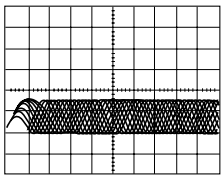
1 Q109-Emitter (RF)
V: 100mV/div. H: 0.1µS/div.



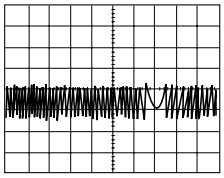
2 TP (RFO)
V: 500mV/div. H: 0.1µS/div.



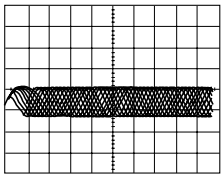
3 IC301-pin 19 (RF for A/D converter)
V: 1V/div. H: 0.2µS/div.



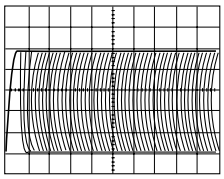
4 TP (Tracking Error)
V: 1V/div. H: 2mS/div.



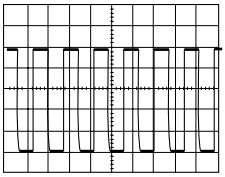
5 IC201-pin 39 (EFM before slice)
V: 1V/div. H: 1µS/div.



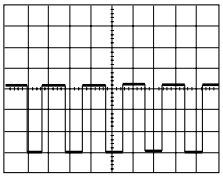
6 IC201-pin 1 (EFM)
V: 1V/div. H: 0.2µS/div.



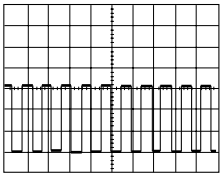
7 Q281-Collector (FG)
V: 1V/div. H: 5mS/div.



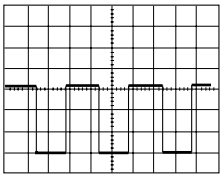
8 Foot of R261 (FPWM)
V: 1V/div. H: 10µS/div.



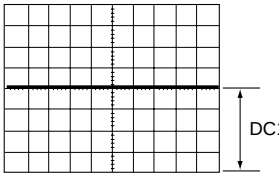
9 Foot of R262 (VPWM)
V: 1V/div. H: 10µS/div.



10 Foot of R263 (PPWM)
V: 1V/div. H: 0.2µS/div.

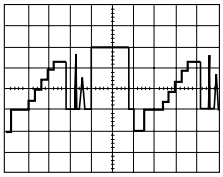


11 Foot of R264 (RPWM)

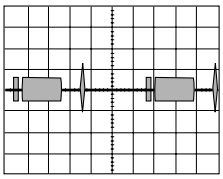


12

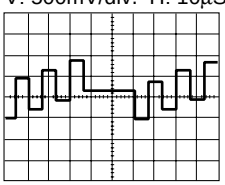
13 CN9031-pin 20 (Y output)
V: 500mV/div. H: 10µS/div.



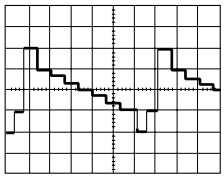
14 CN9031-pin 18 (C output)
V: 500mV/div. H: 10µS/div.



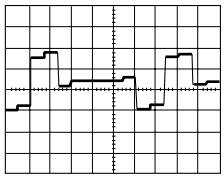
15 CN9031-pin 6 (C_B output when selecting color difference output)
V: 500mV/div. H: 10µS/div.



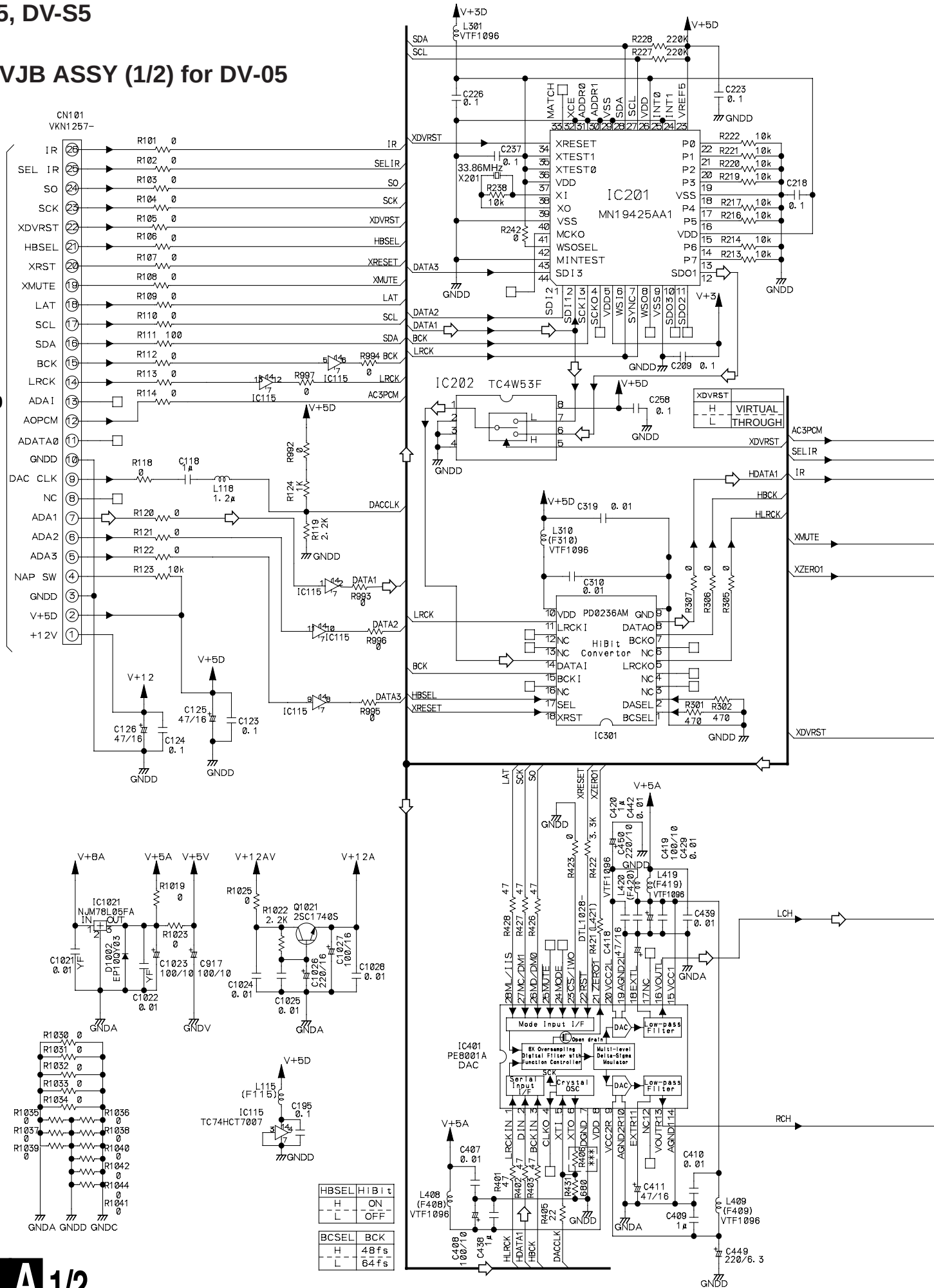
16 CN9031-pin 20 (Y output when selecting color difference output)
V: 500mV/div. H: 10µS/div.



17 CN9031-pin 2 (C_R output when selecting color difference output)
V: 500mV/div. H: 10µS/div.



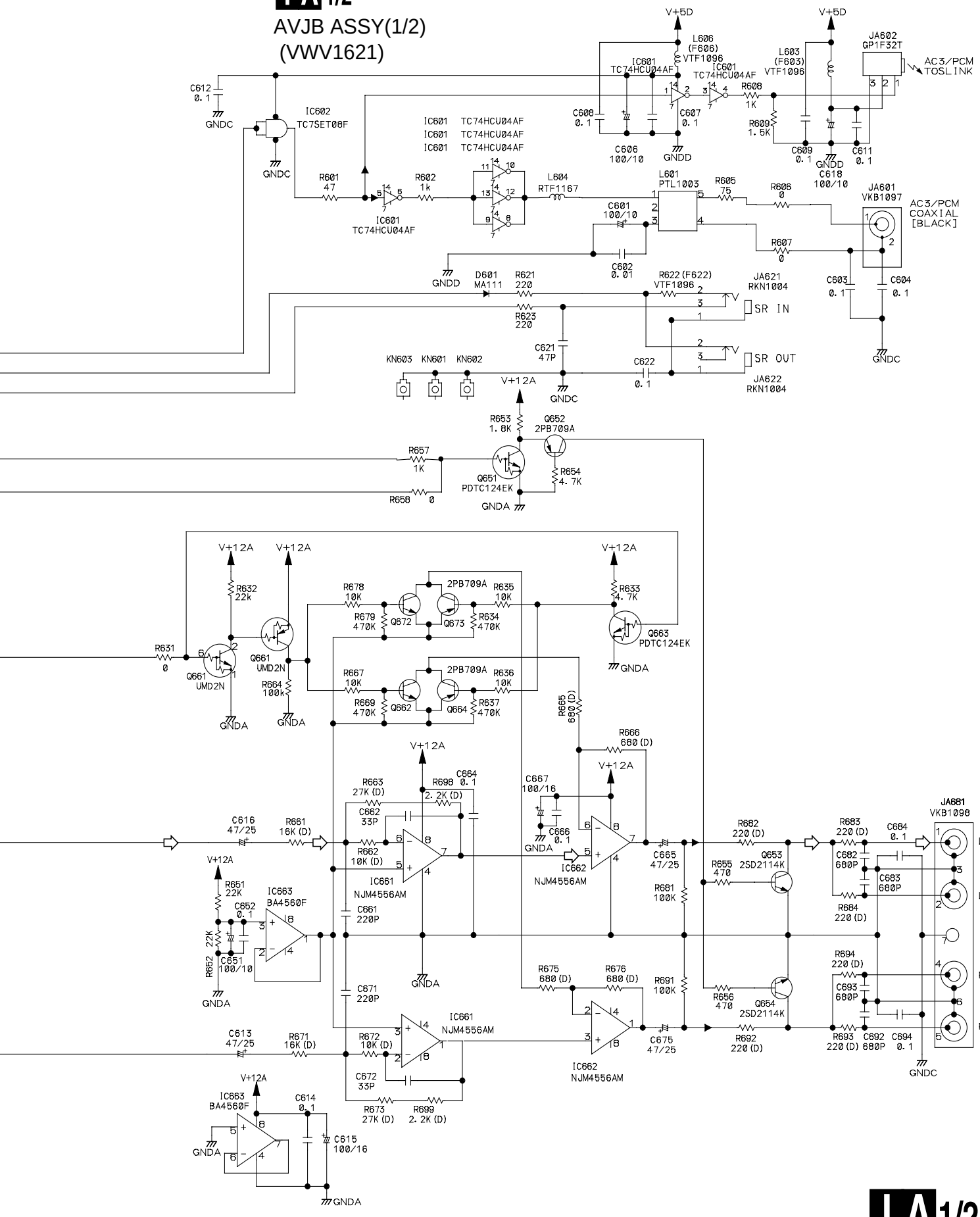
3.7 AVJB ASSY (1/2) for DV-05



IA 1/2

AVJB ASSY(1/2) (VWV1621)

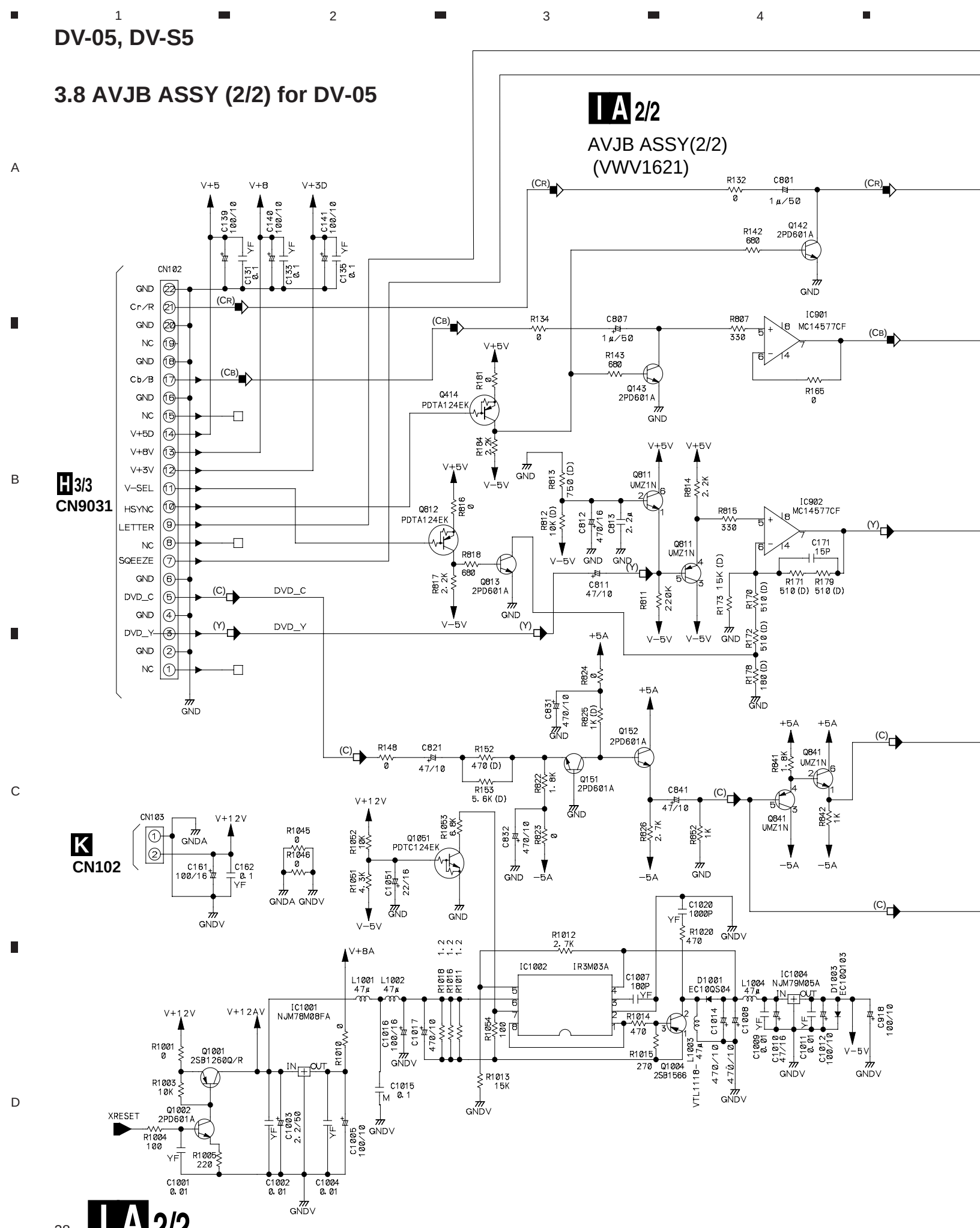
: AUDIO SIGNAL ROUTE

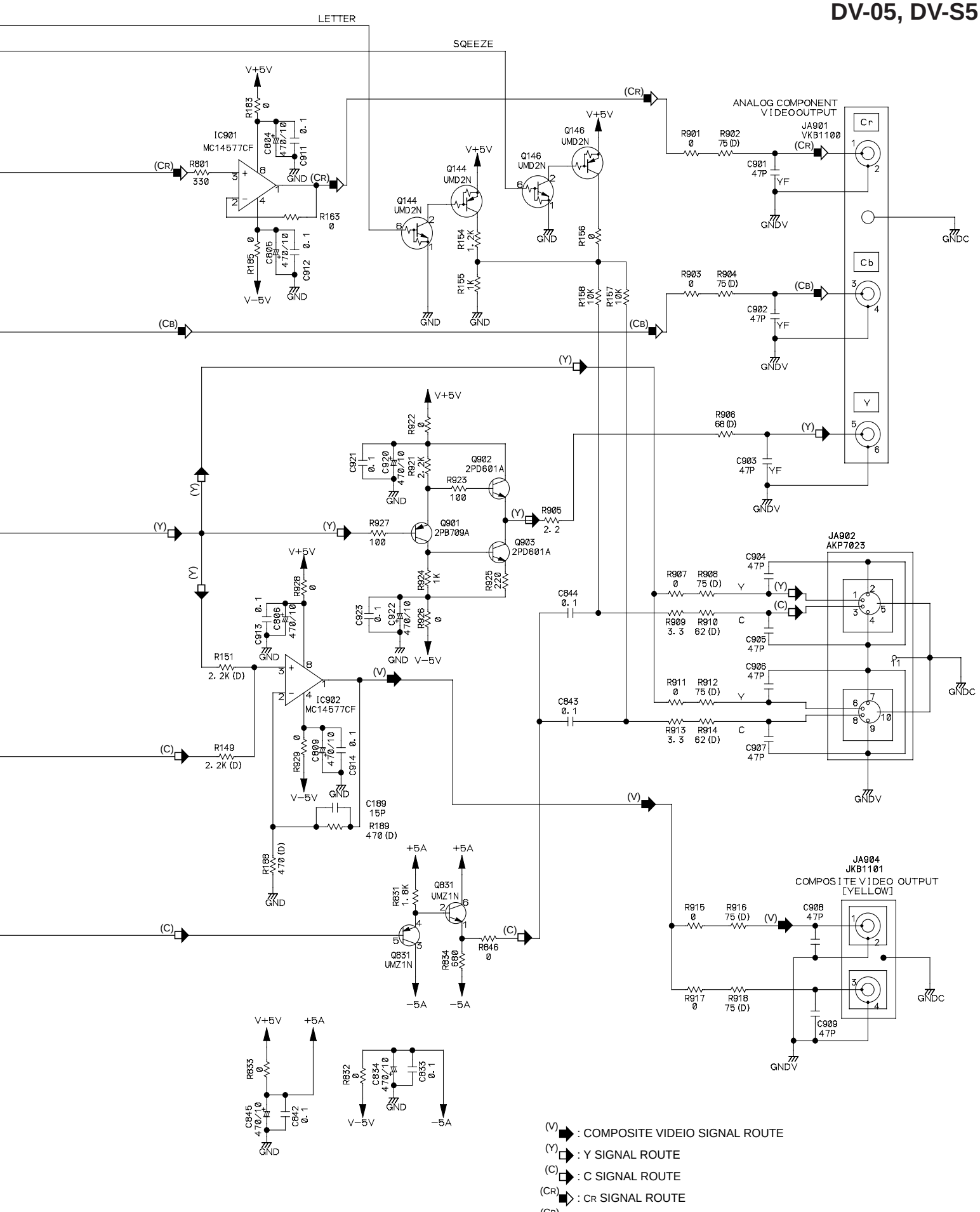


3.8 AVJB ASSY (2/2) for DV-05

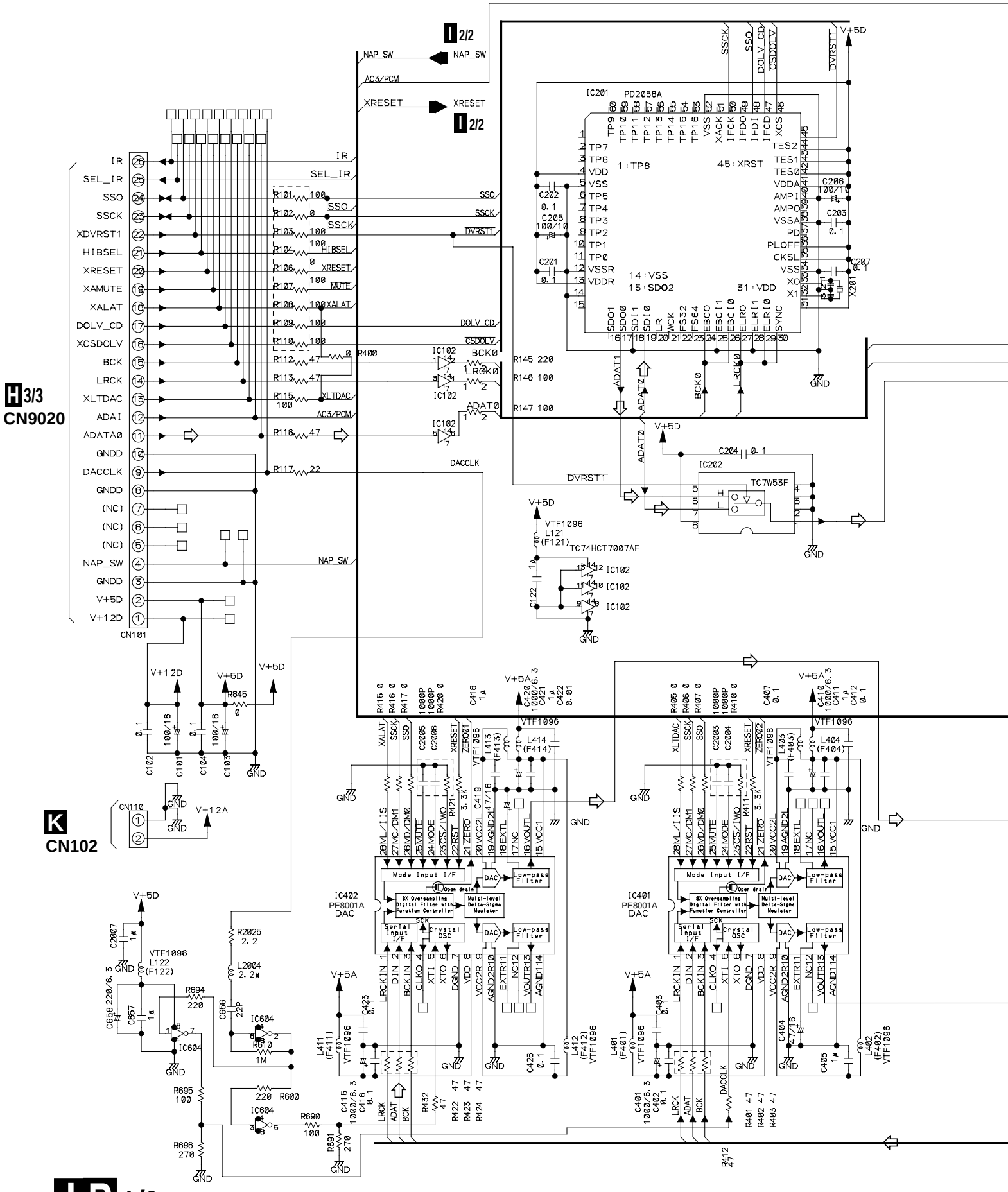
I A 2/2

AVJB ASSY(2/2)
(VWV1621)




LETTER
SQEEZE
ANALOG COMPONENT VIDEO OUTPUT
JA901 VKB1100
JA902 AKP7023
JA904 JKB1101
COMPOSITE VIDEO OUTPUT [YELLOW]
IC901 MC14577CF
IC902 MC14577CF
V+5V
V-5V
+5A
-5A
GND
GNDV
GNDC
(V) : COMPOSITE VIDEIO SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE
(CR) : CR SIGNAL ROUTE
(CB) : CB SIGNAL ROUTE

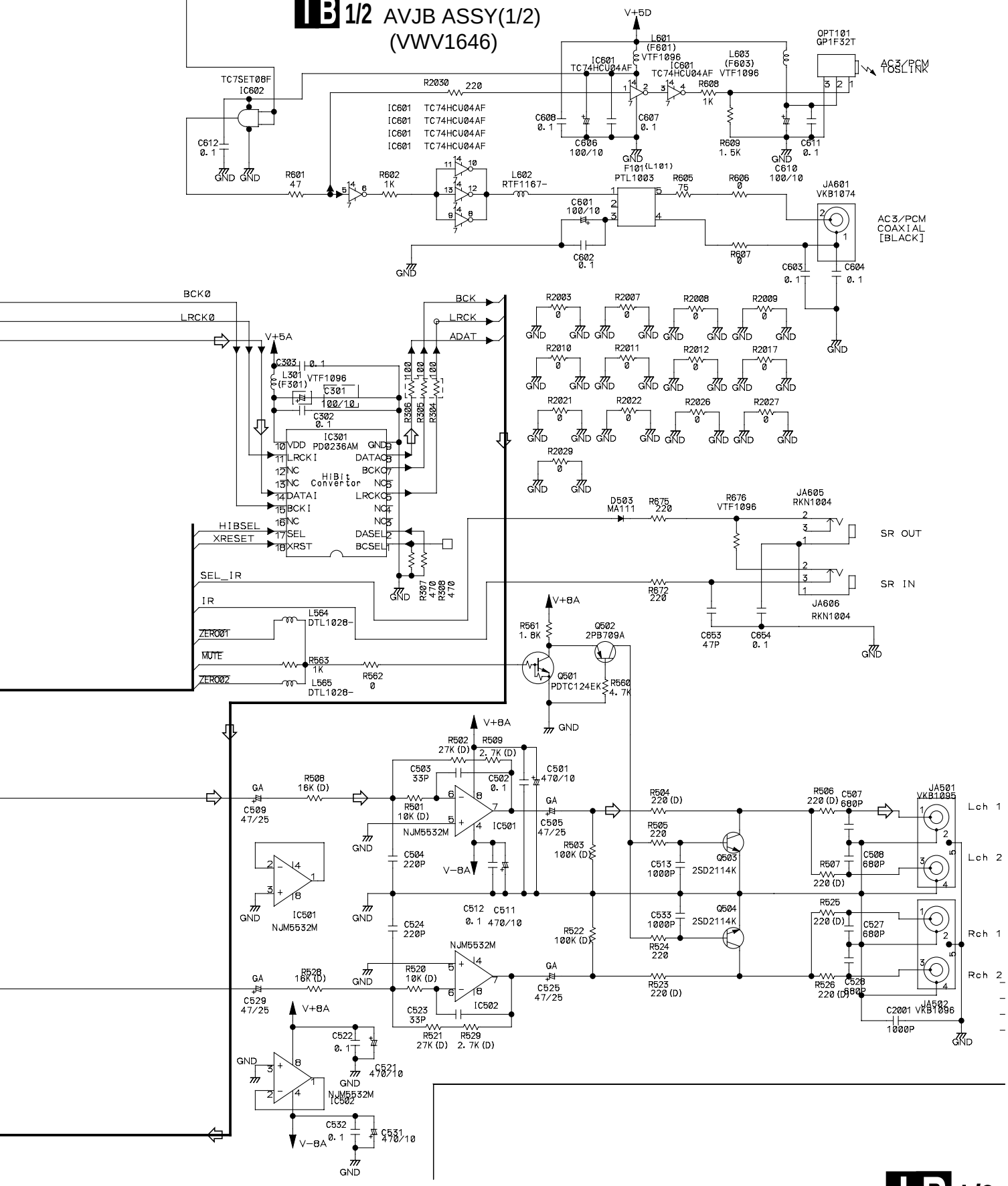
3.9 AVJB ASSY (1/2) for DV-S5



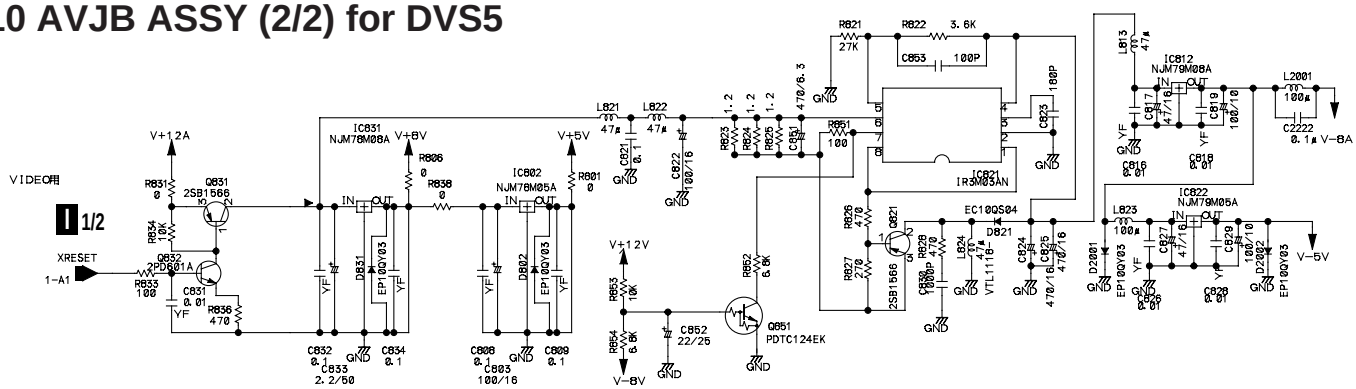
HBSEL	HiBit
H	ON
L	OFF

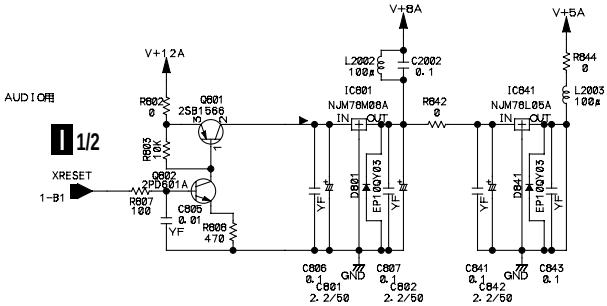
: AUDIO SIGNAL ROUTE

IB 1/2 AVJB ASSY(1/2) (VWV1646)



3.10 AVJB ASSY (2/2) for DVS5

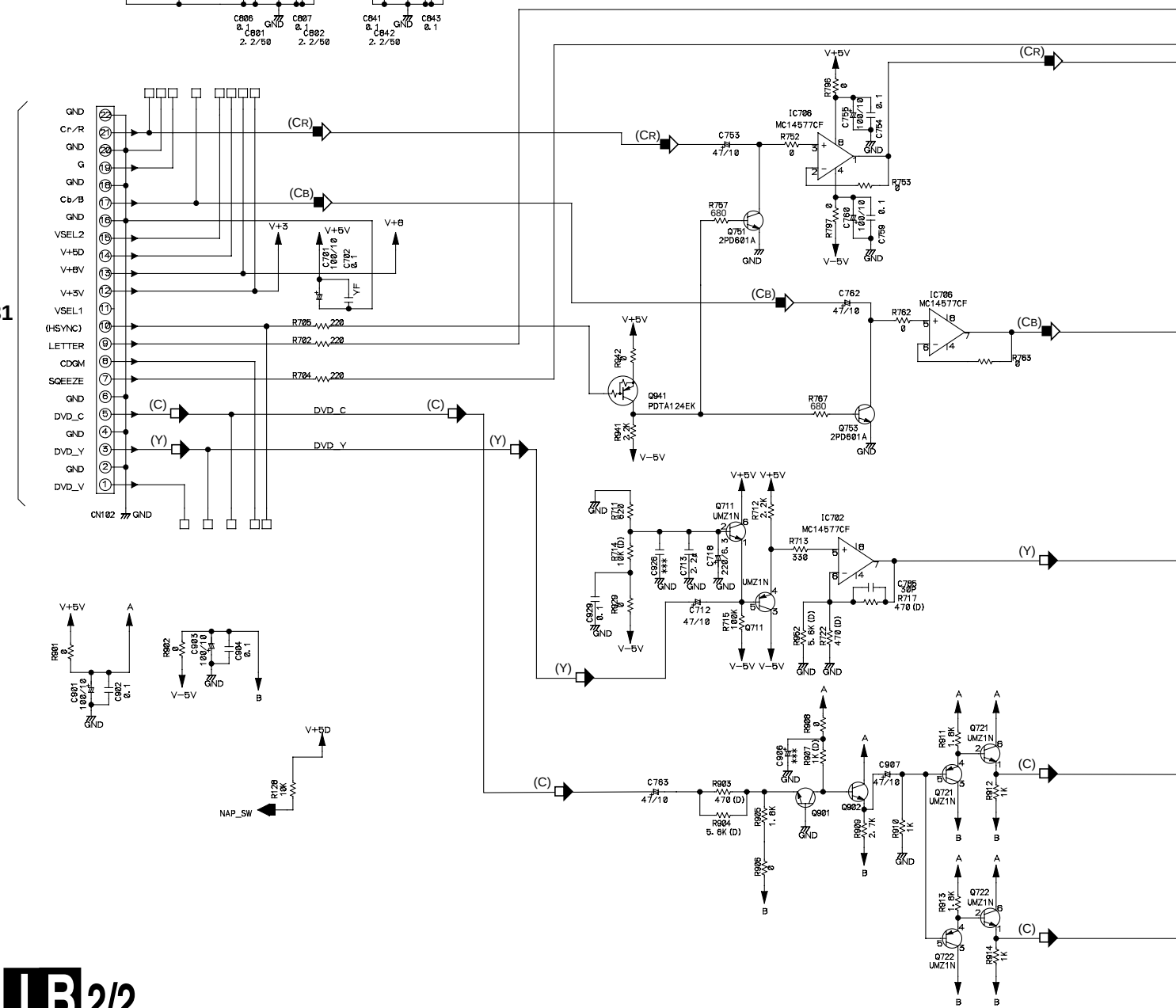




I B 2/2

AVJB ASSY(2/2)
(VWV1646)

H 3/3
CN9031



717のとき

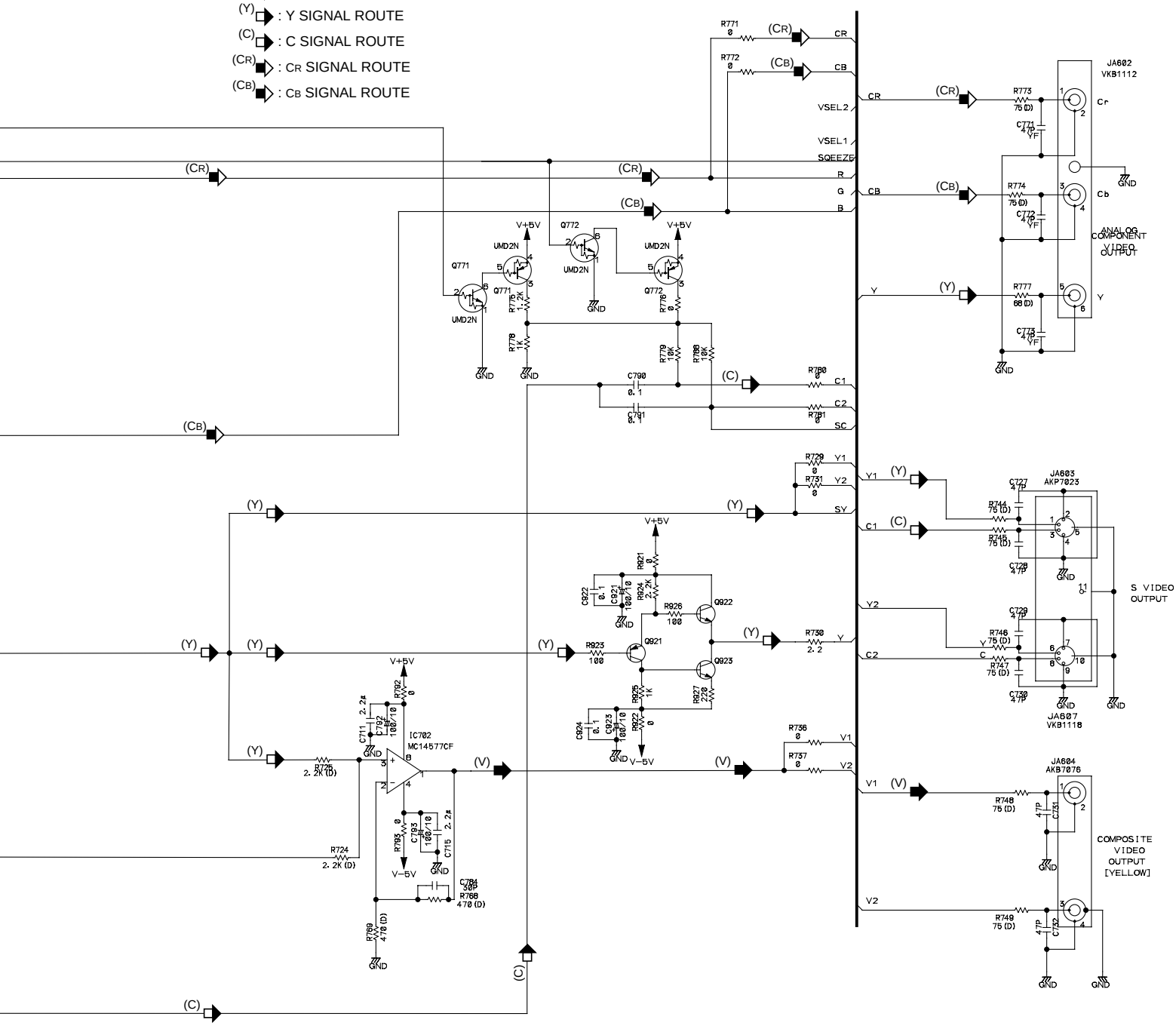
VSEL1 (BLANK)	H	L	
VSEL2	(H)	H	L
OUTPUT	RGB, V	V	S

VWV1646− (DV−S5/J)
VWV1617− (DV−717/WY)

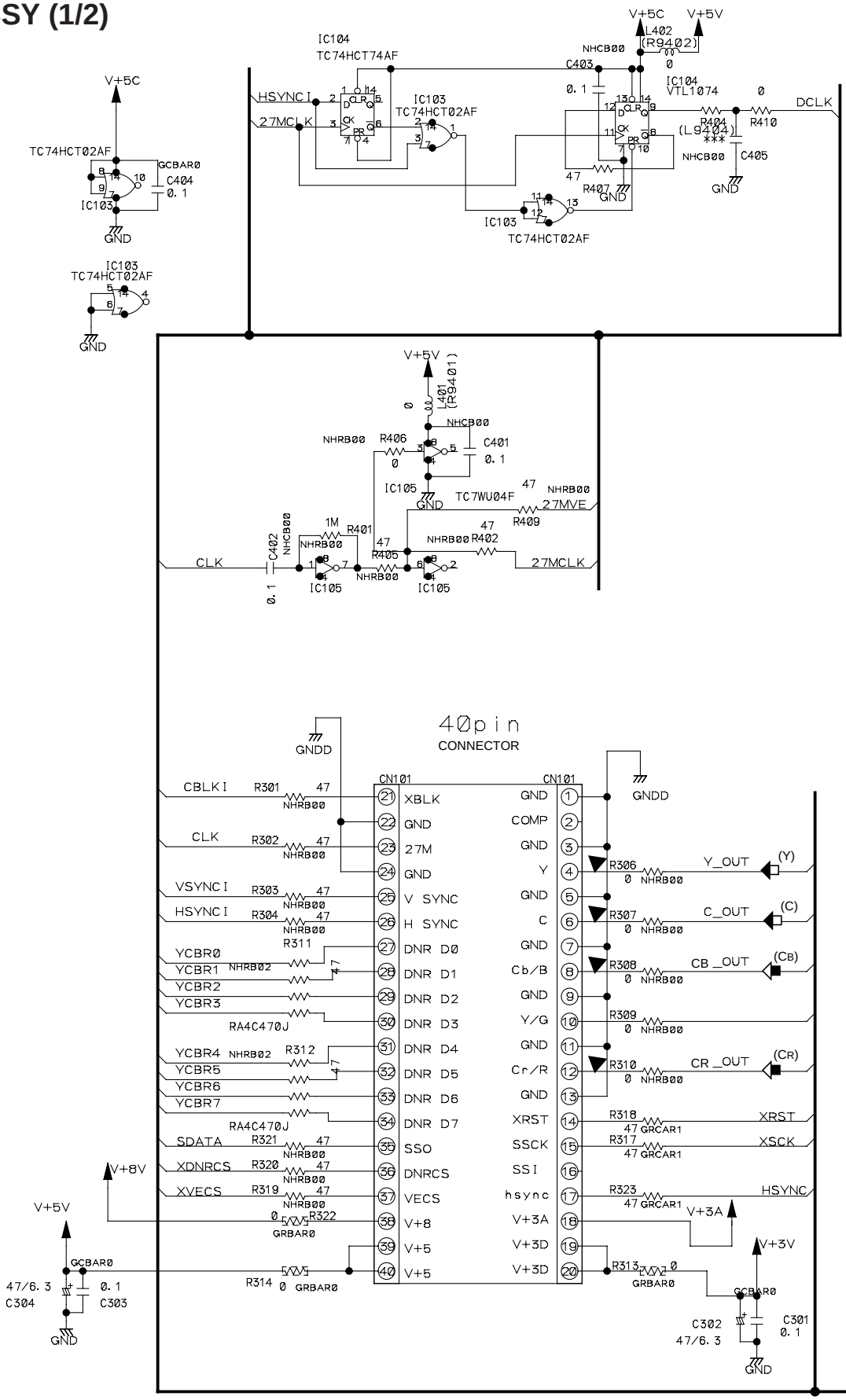
R982 0 GND GND
R983 0 GND GND

R2013 0 GND GND
R2014 0 GND GND
R2015 0 GND GND
R2016 0 GND GND

(V) : COMPOSITE VIDEIO SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE
(CR) : CR SIGNAL ROUTE
(CB) : CB SIGNAL ROUTE

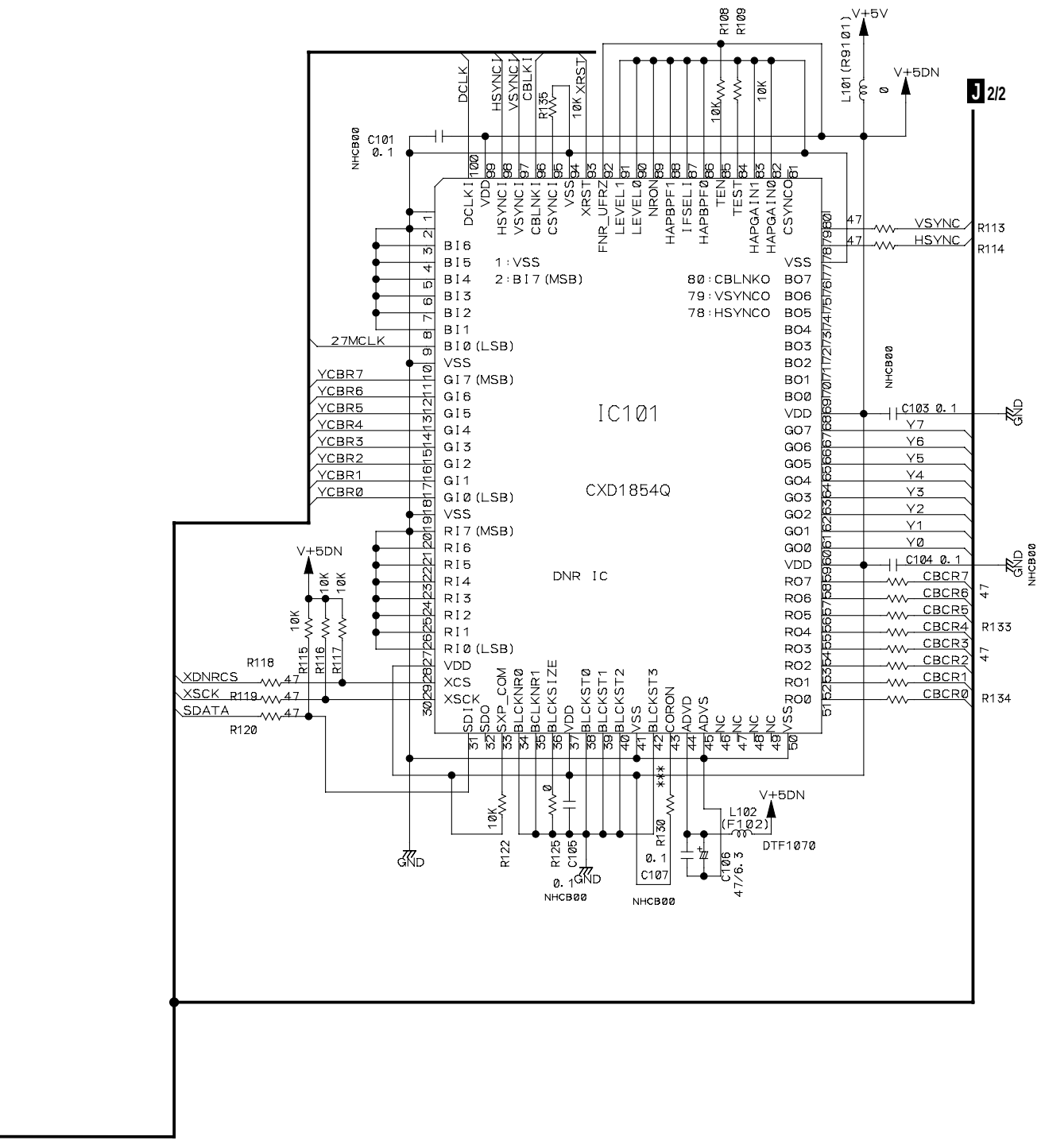


3.11 DNRB ASSY (1/2)



J 1/2
DNRB ASSY(1/2)
(VWV1619)

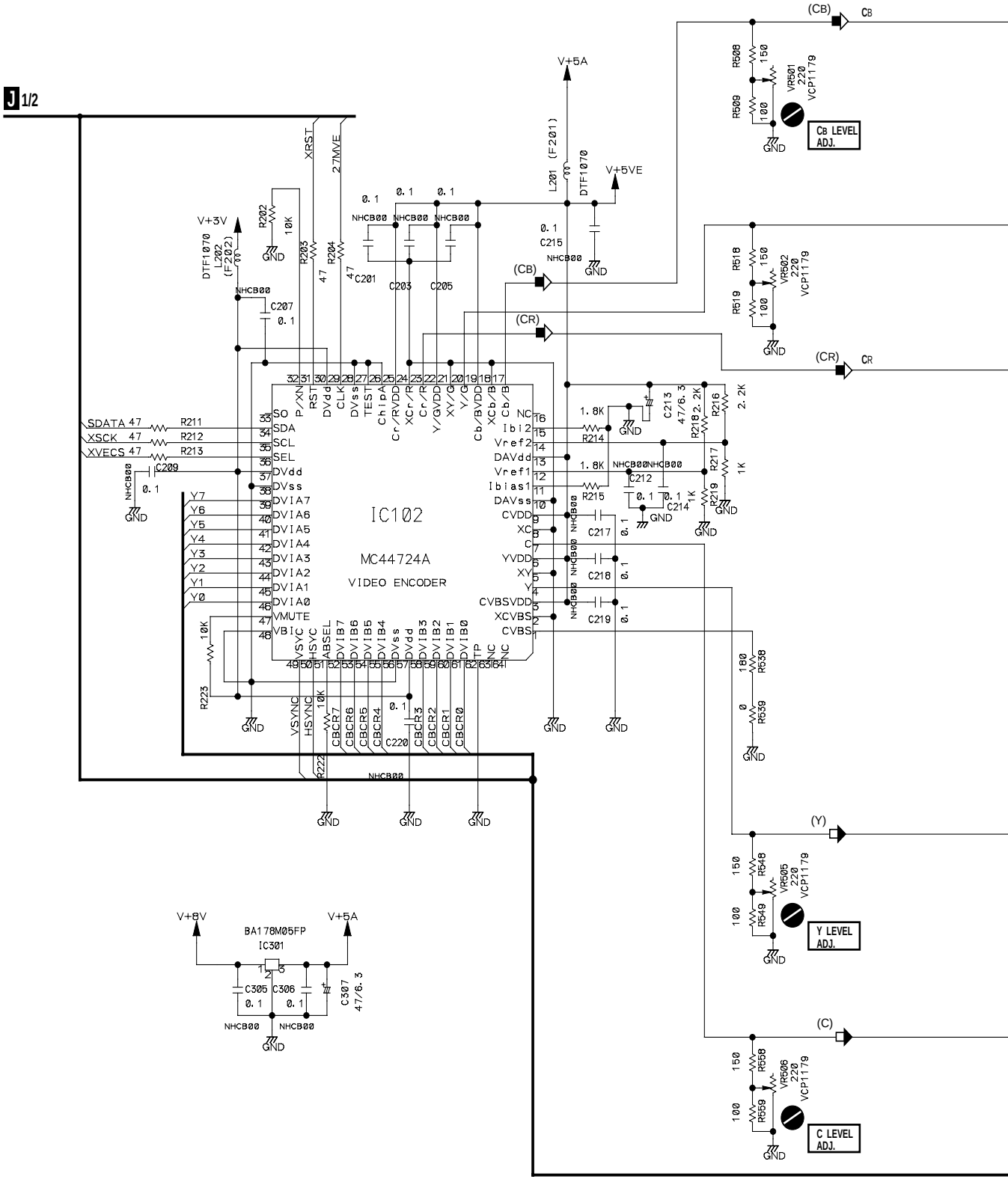
(CR) : CR SIGNAL ROUTE
(CB) : CB SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE

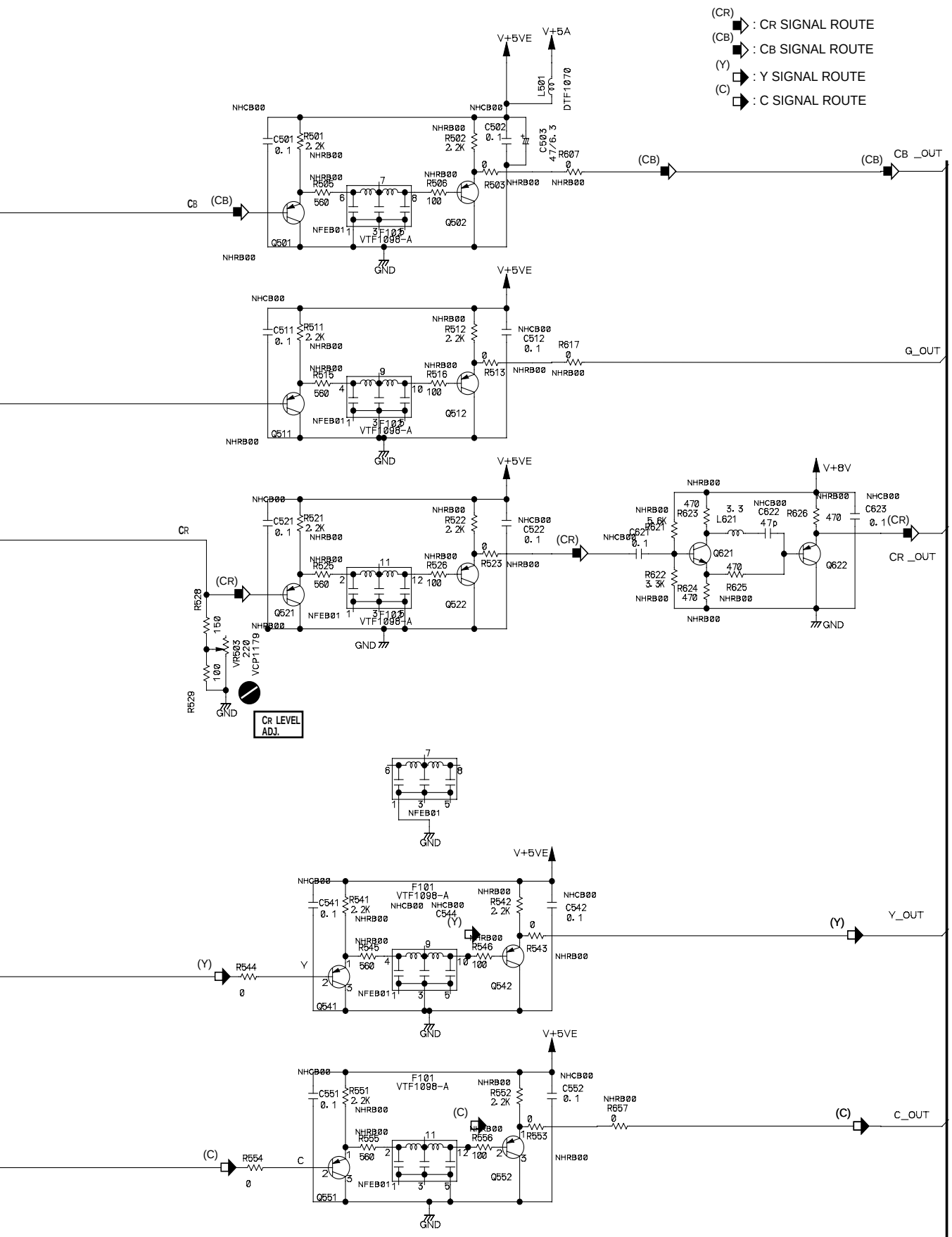


3.12 DNRB ASSY (2/2)

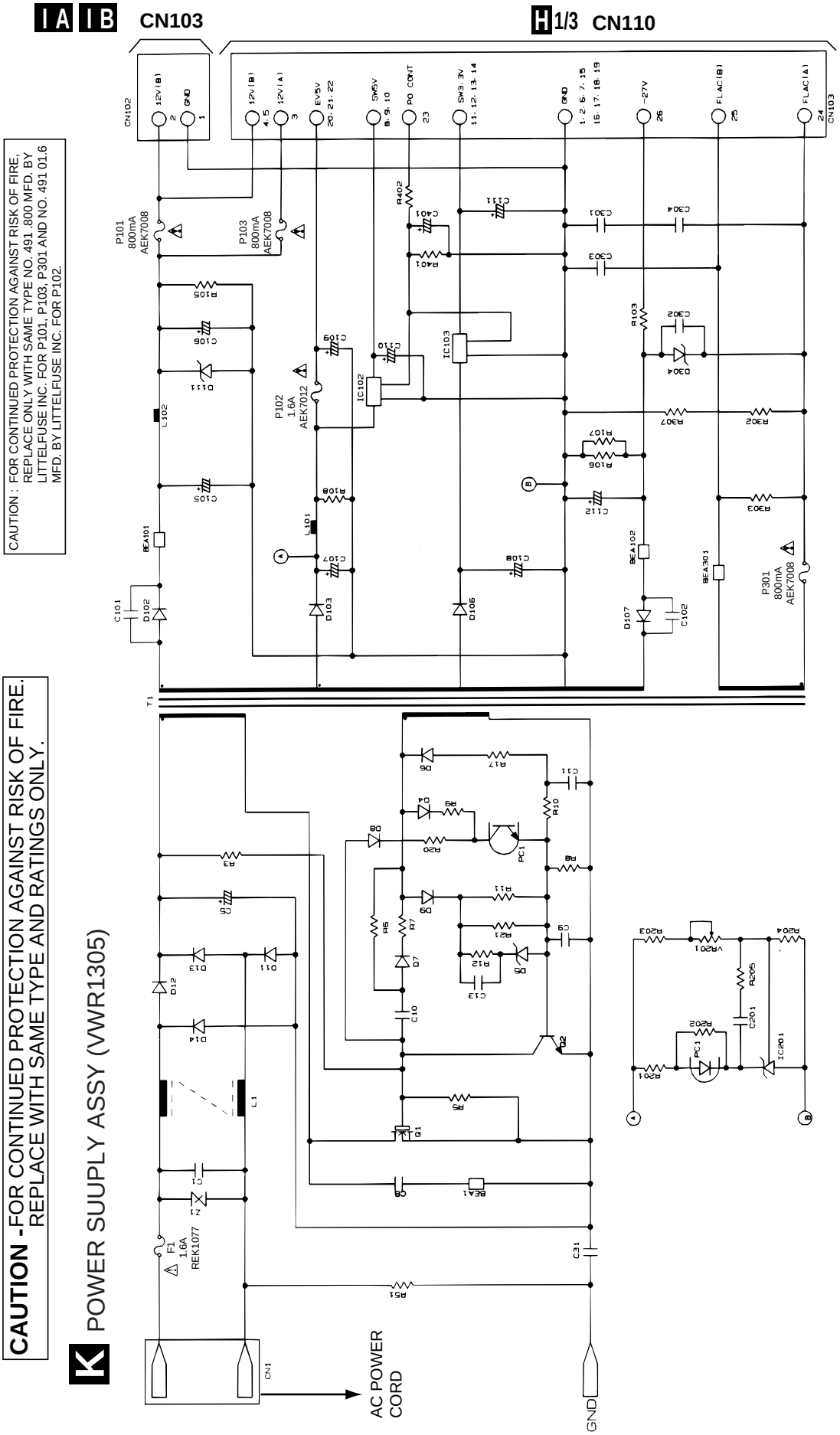
J 2/2

DNRB ASSY(2/2)
(VWV1619)




(CR) : CR SIGNAL ROUTE
(CB) : CB SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE
V+5VE
V+5A
V+8V
GND
CB
(CB)
CB _OUT
G_OUT
CR
(CR)
CR _OUT
CR LEVEL ADJ.
Y
(Y)
Y_OUT
C
(C)
C_OUT
VTF1098-A
NFEB01
Q501
Q502
Q511
Q512
Q521
Q522
Q541
Q542
Q551
Q552
Q621
Q622

3.13 POWER SUPPLY ASSY and MSWB ASSY


IA IB CN103
H 1/3 CN110
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. 491 .800 MFD. BY LITTELFUSE INC. FOR P101, P103, P301 AND NO. 491 01.6 MFD. BY LITTELFUSE INC. FOR P102.
• NOTE FOR FUSE REPLACEMENT
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.
K POWER SUUPLY ASSY (VWR1305)
AC POWER CORD
GND
P101 800mA AEK7008
P103 800mA AEK7008
P102 1.6A AEK7012
P301 800mA AEK7008
F1 16A REK1077
CN102
CN103
CN1
T1
IC101
IC102
IC103
PC1

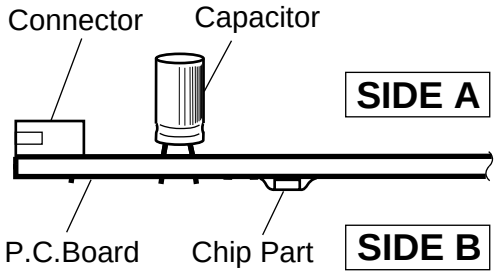
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

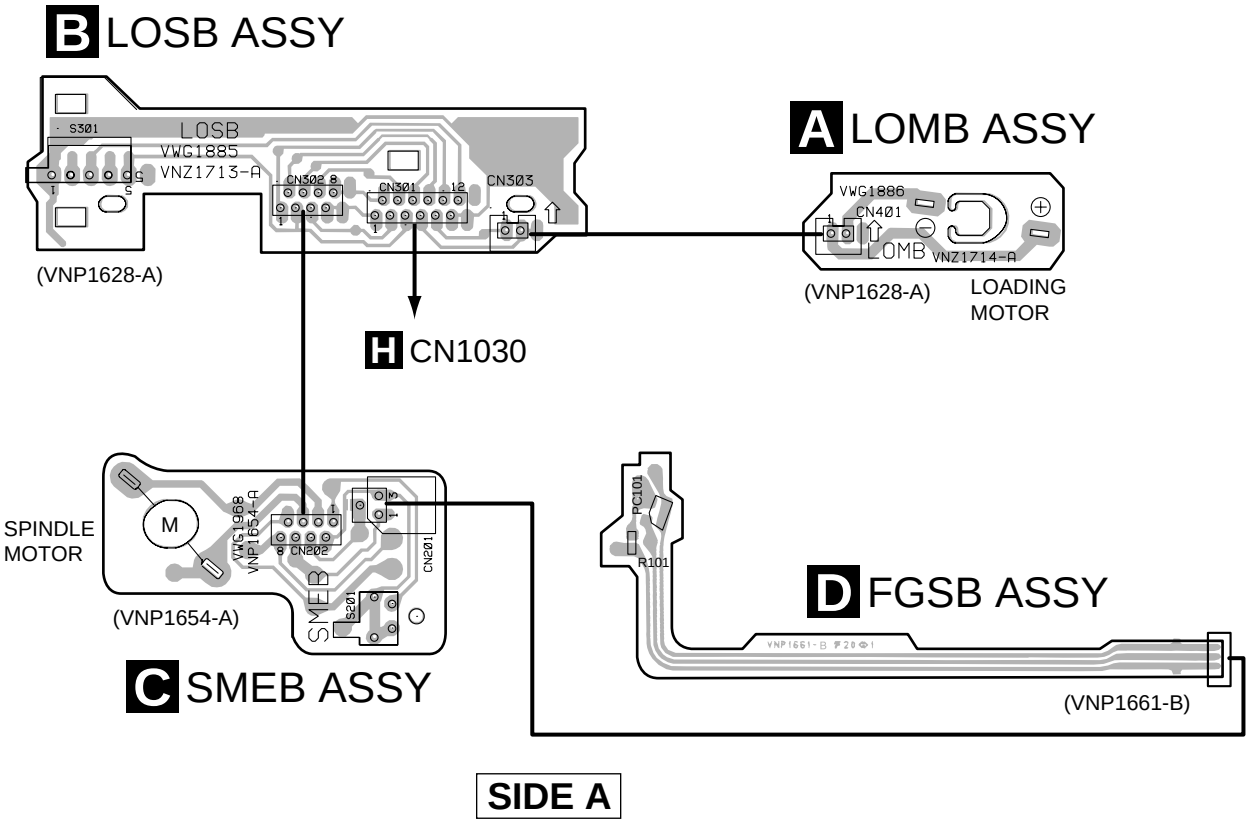
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

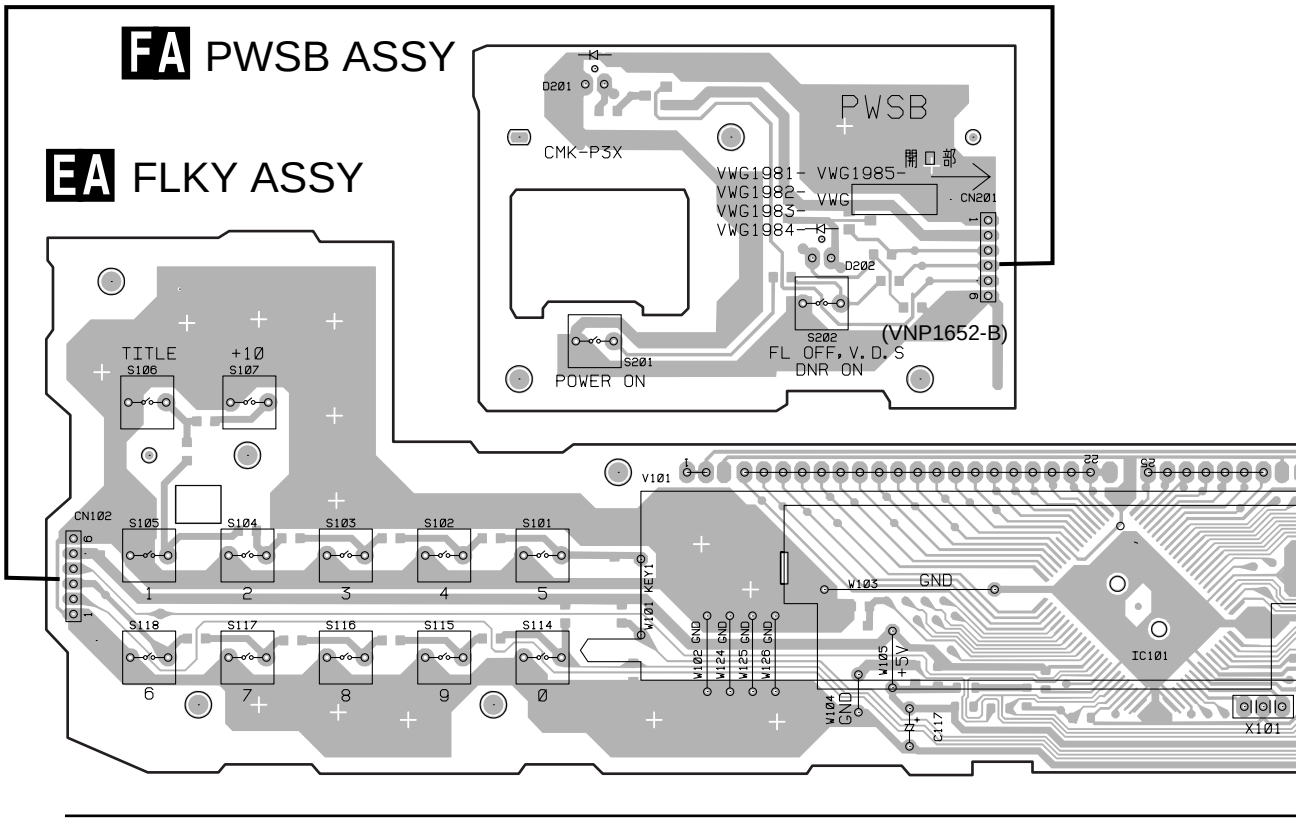


4.1 LOMB, LOSB, SMEB and FGSB ASSEMBLIES



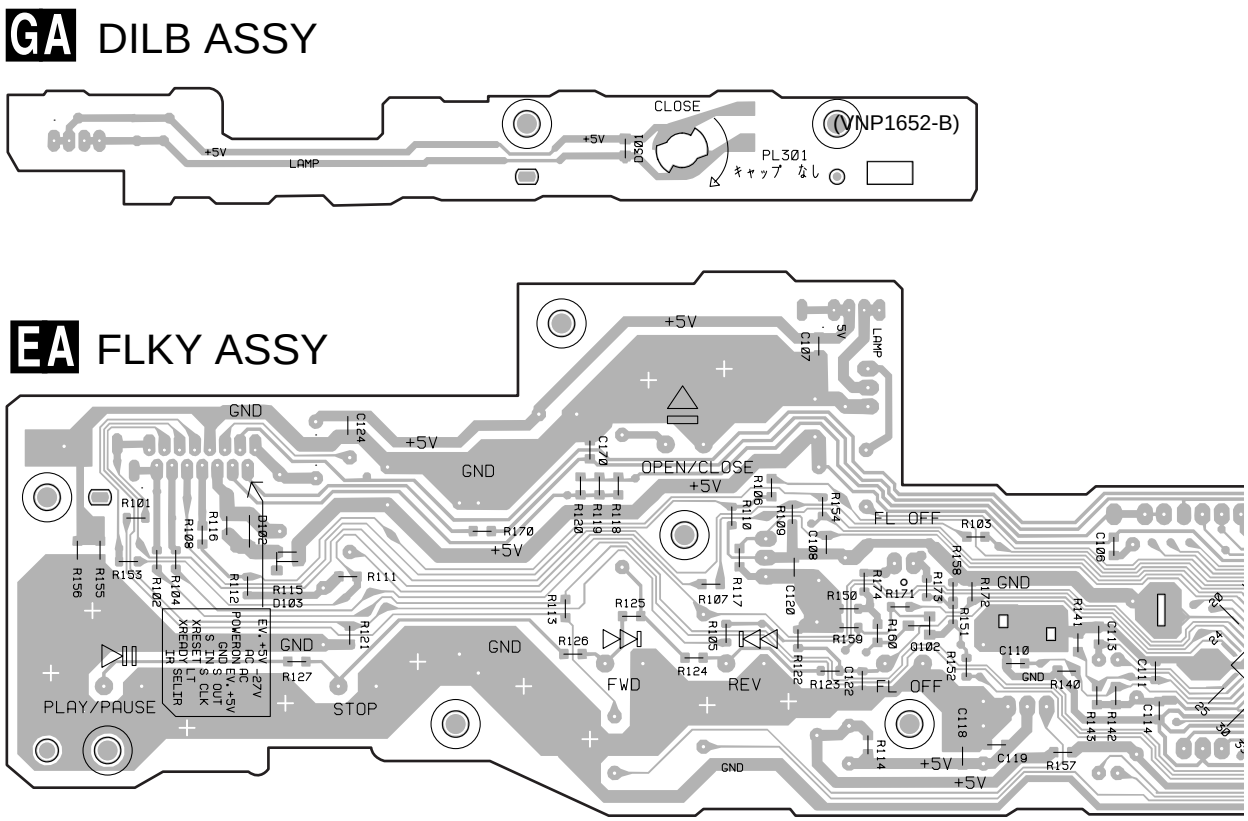
4.2 FLKY, PWSB and DILB ASSEMBLIES for DV-05

SIDE A



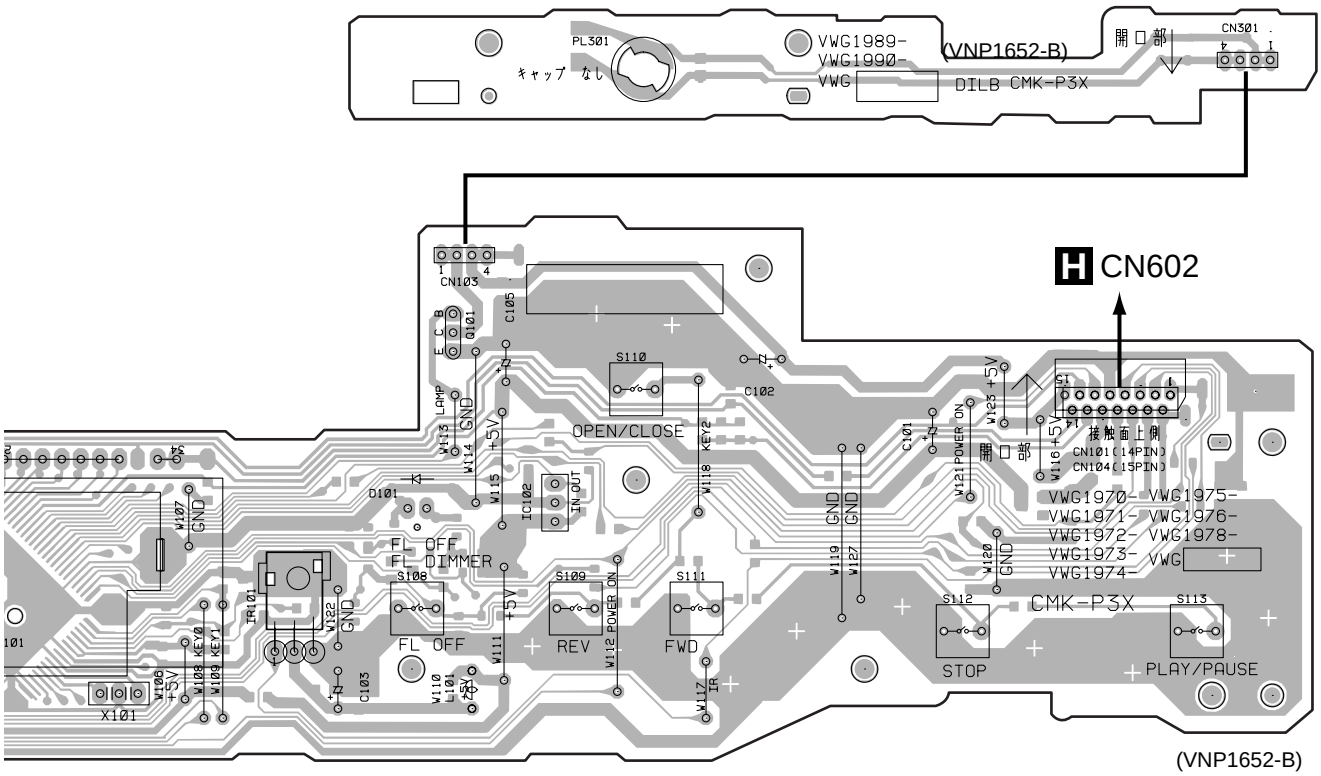
IC101

SIDE B



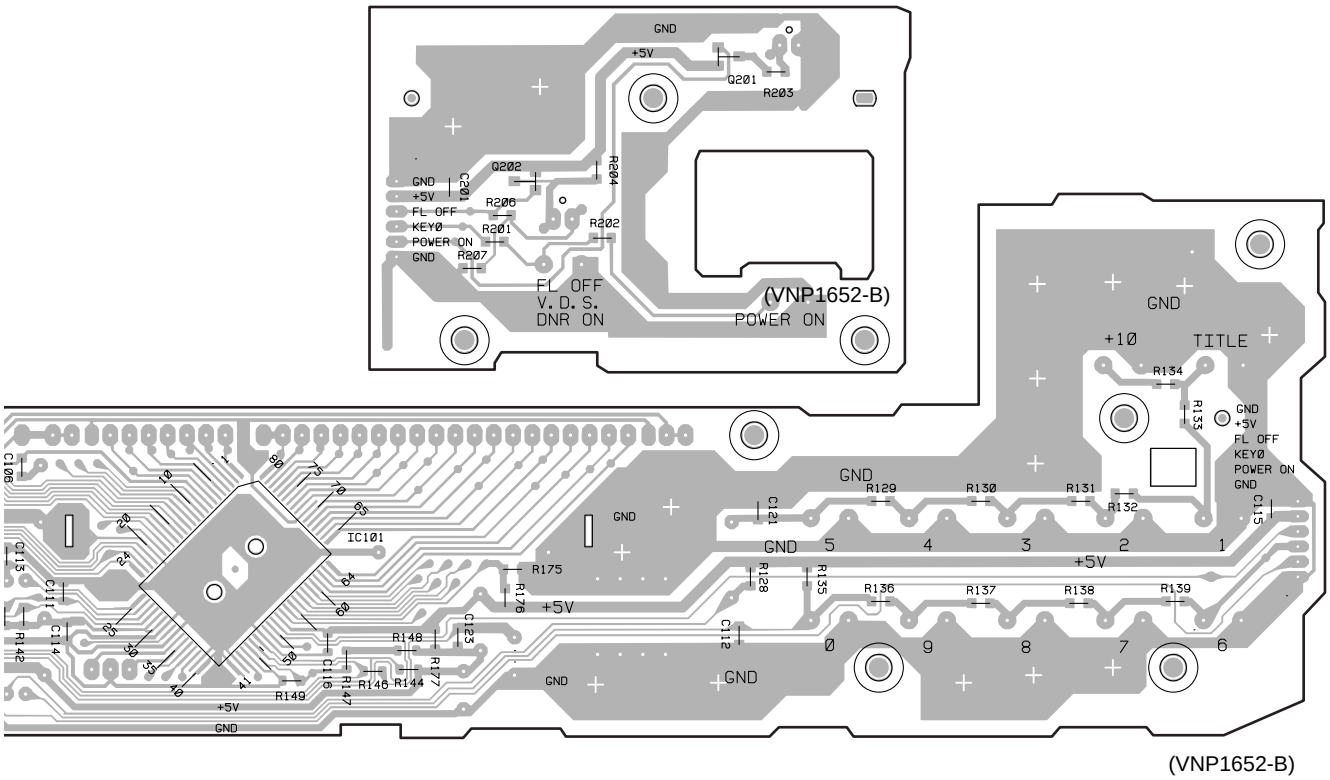
Q102

GA DILB ASSY



L01 Q101 IC102

FA PWSB ASSY

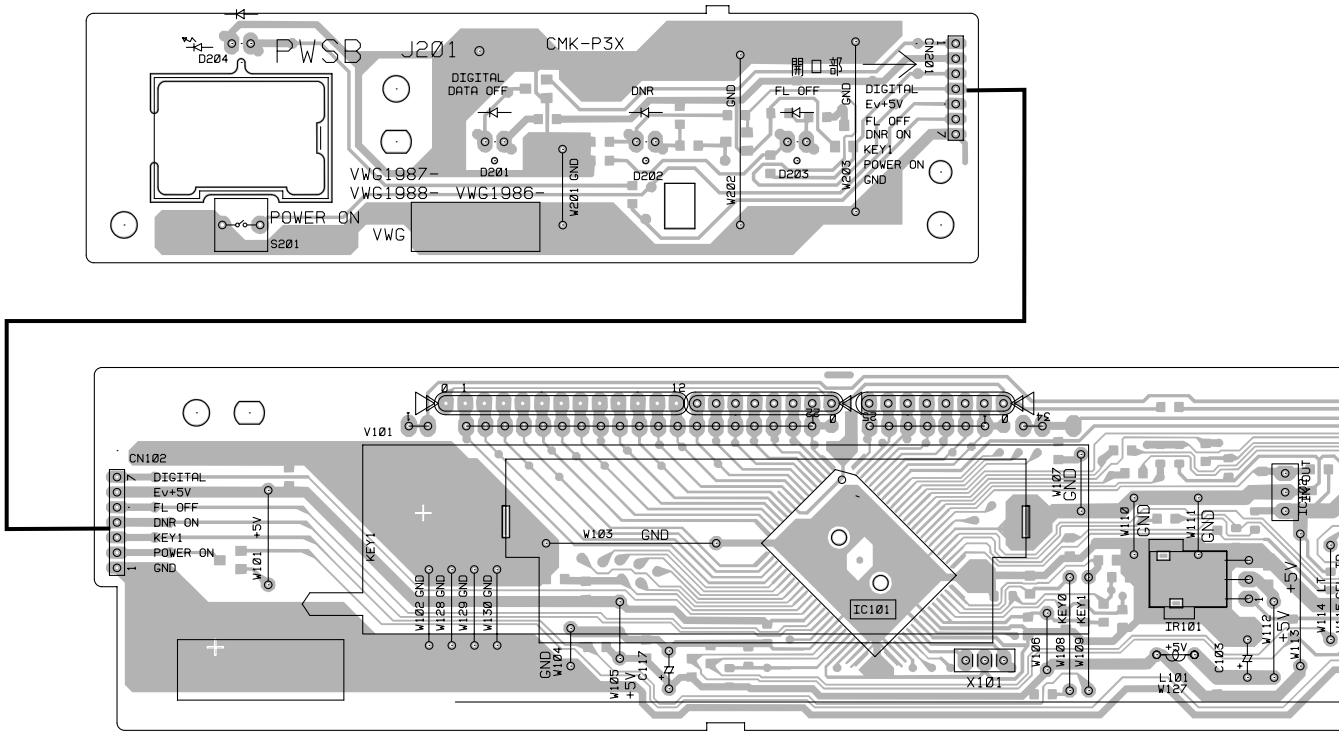


IC101

4.3 FLKY, PWSB and DILB ASSEMBLIES for DV-S5

FB PWSB ASSY

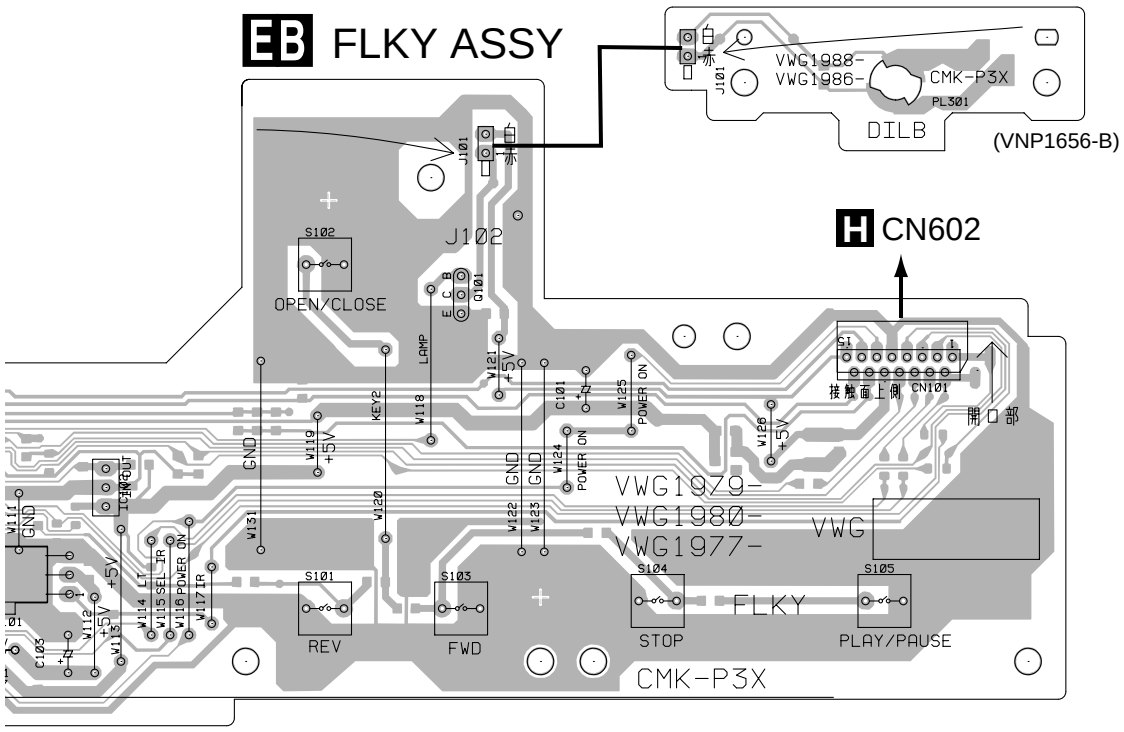
(VNP1656-B)



GB DILB ASSY

SIDE A

EB FLKY ASSY



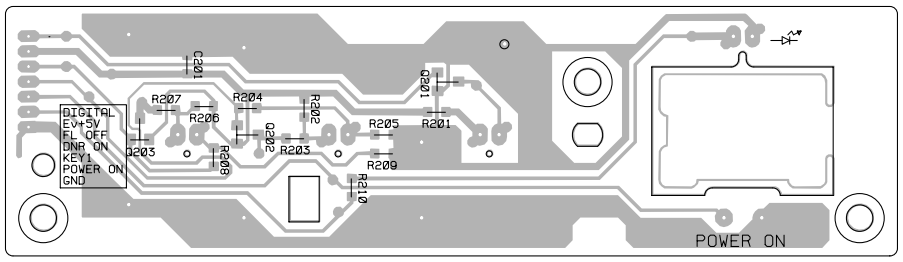
(VNP1656-B)

IC102 Q101

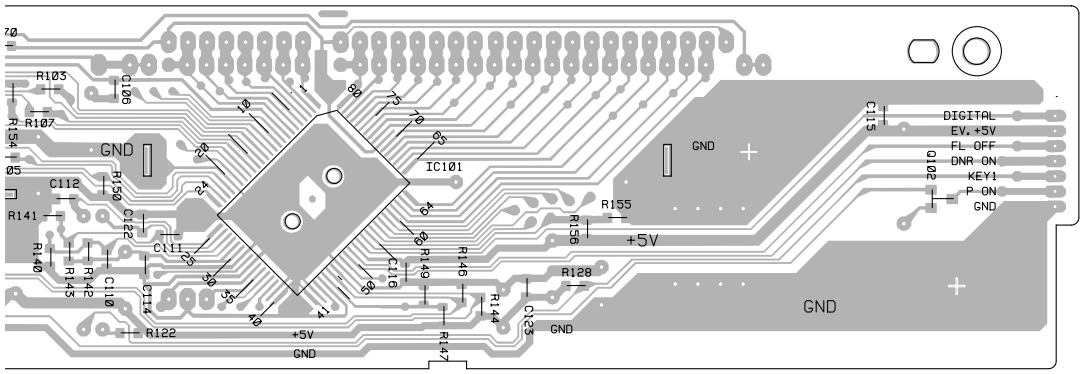
FB PWSB ASSY

(VNP1656-B)

SIDE B



Q203 Q202 Q201

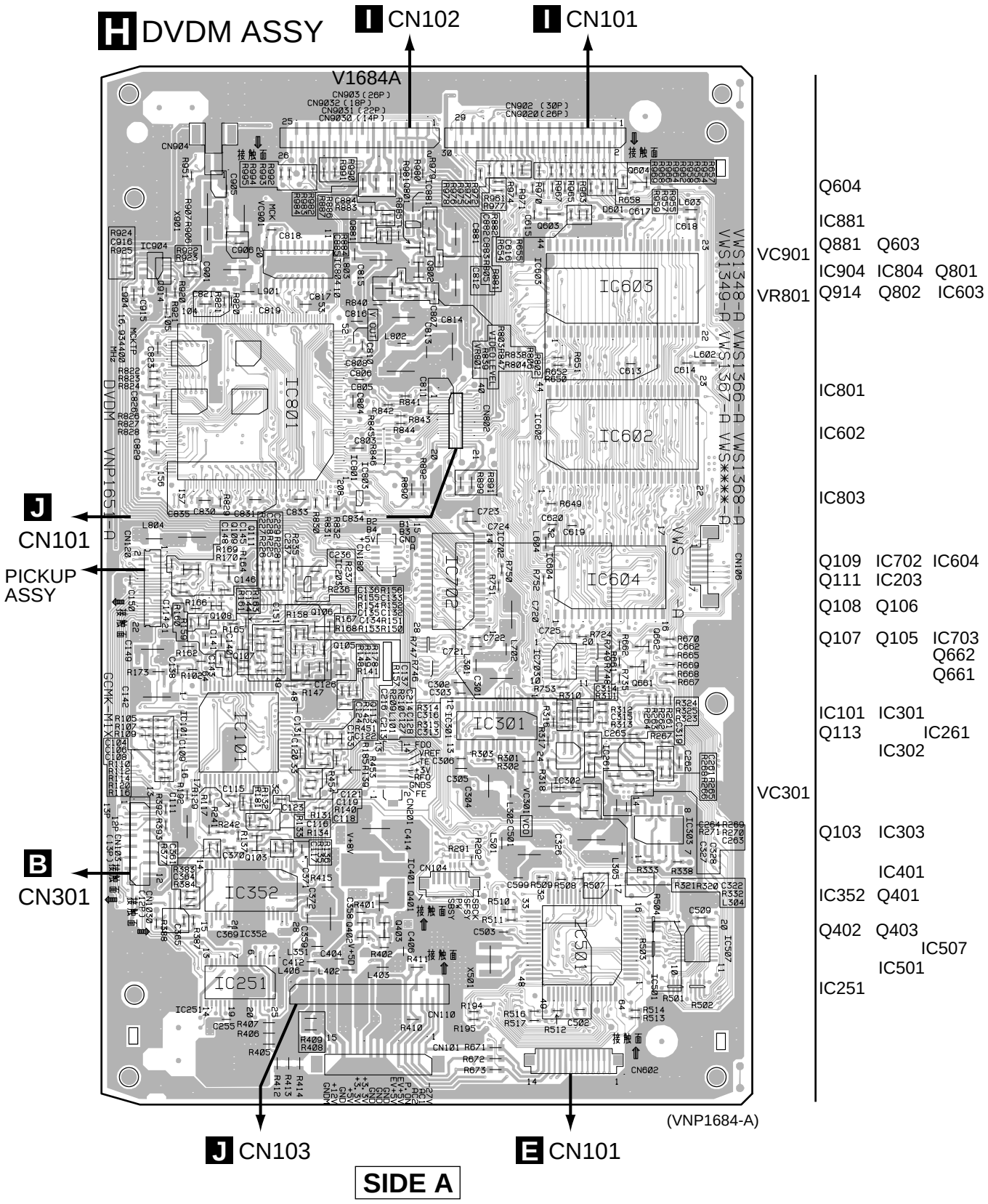


(VNP1656-B)

IC101 Q102

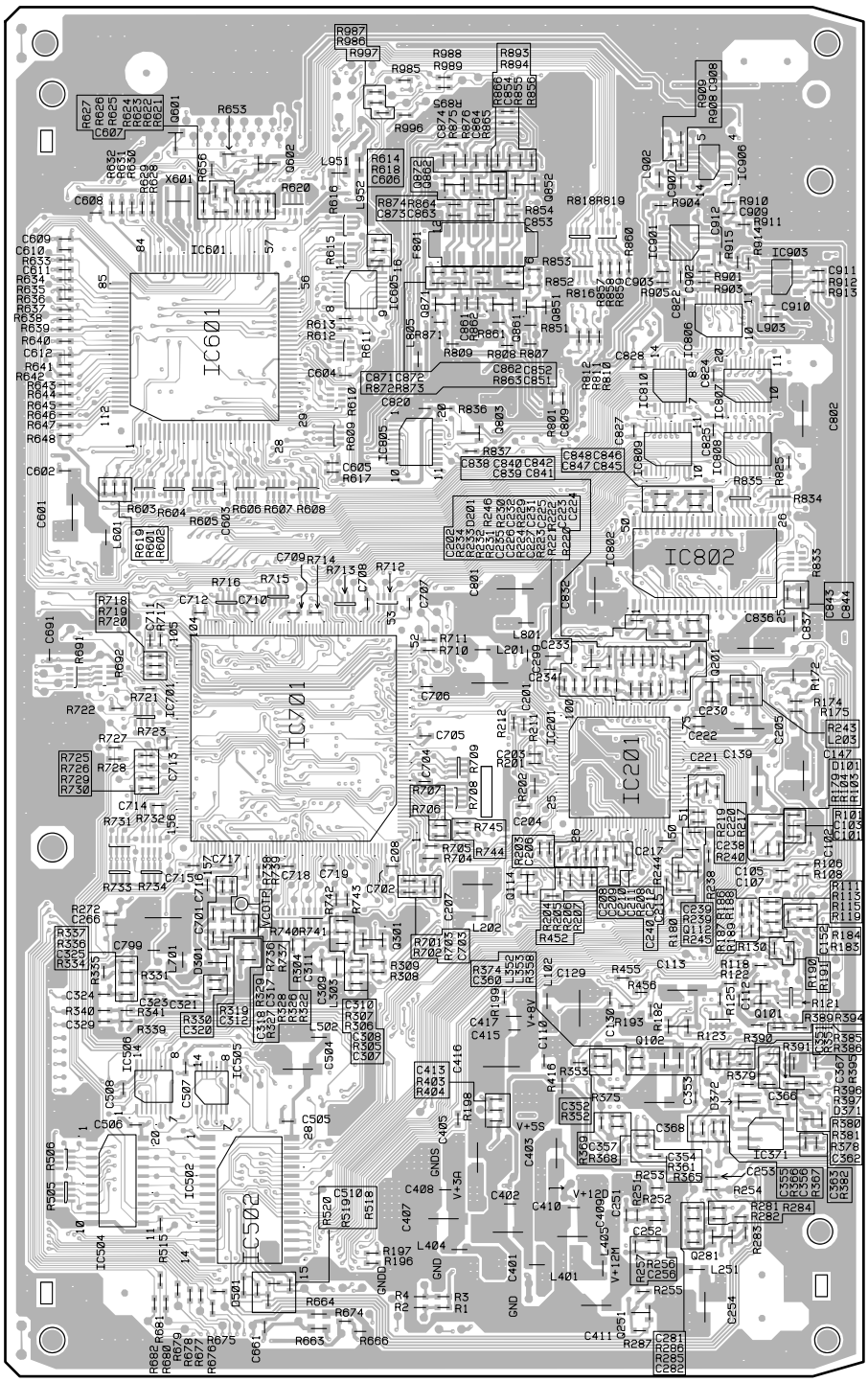
4.4 DVDM ASSY

• This PCB is a four-layered board. Middle layer is mainly connected to Vcc and GND.



• This PCB is a four-layered board. Middle layer is mainly connected to Vcc and GND.

H DVDM ASSY



Q601 Q602 IC906
Q872 Q862 Q852

IC901
IC903

IC605
Q871 Q861 Q851
IC601 IC806

IC810 IC807

IC805 Q803
IC809 IC808

IC802

Q201
IC701

IC201

Q112
Q114

Q301

Q101

Q102

IC506 IC505

IC371

IC504
IC502 Q281

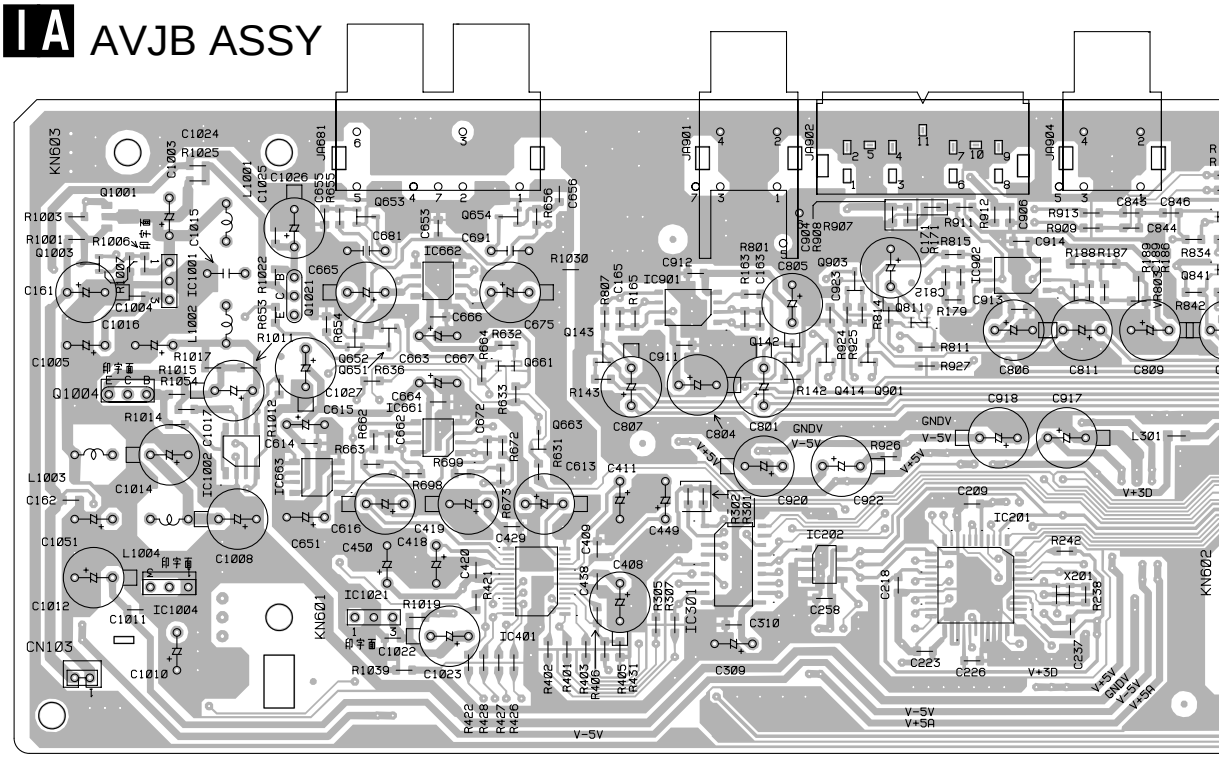
Q251

(VNP1684-A)

SIDE B

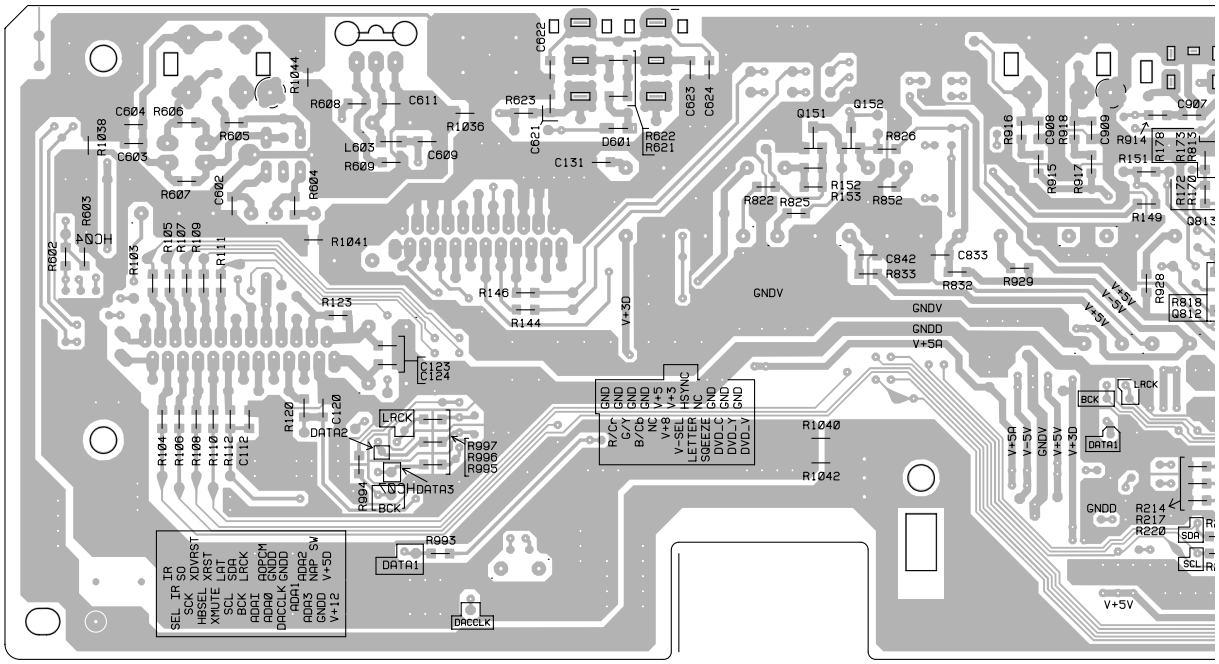
4.5 AVJB ASSY for DV-05

IA AVJB ASSY



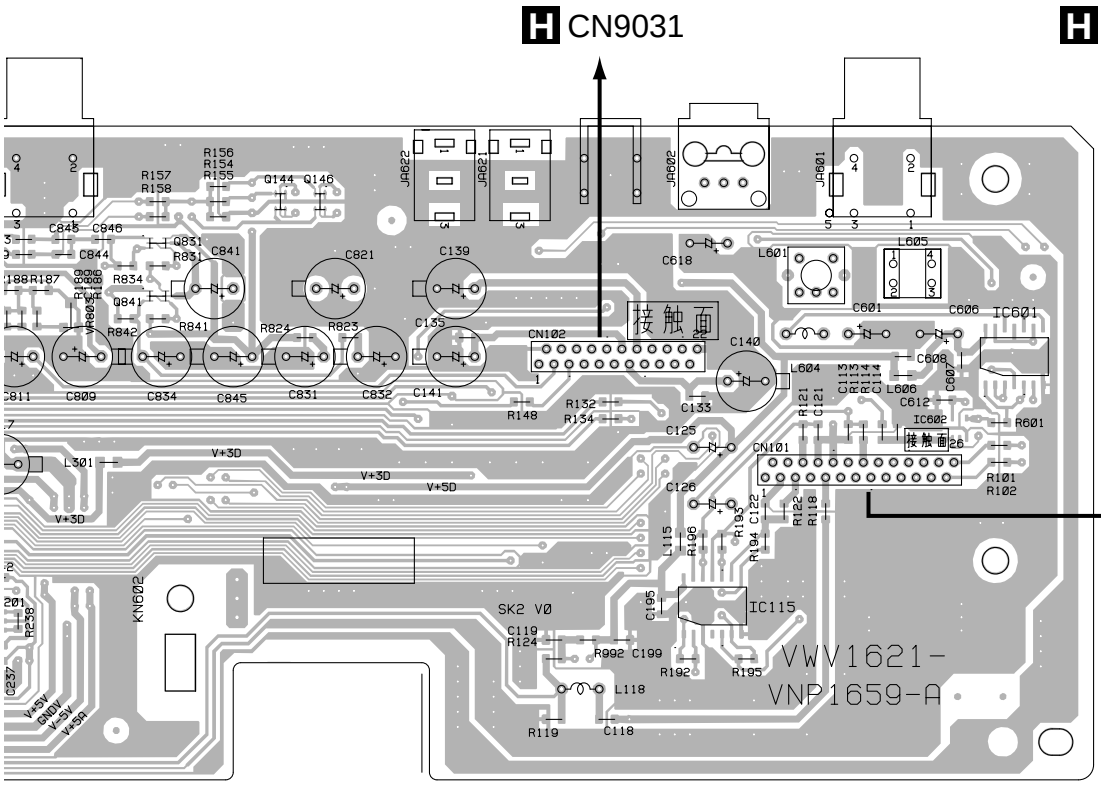
Q1004	IC1001 IC1004	IC1002	Q1021 IC663	IC1021 Q853 Q852 Q851	IC662 IC661	Q654 Q661 Q663 Q851	Q143	IC901 IC301	Q142	Q903 Q414 IC202	Q811 Q901 Q663	IC902 IC201		Q Q

IA AVJB ASSY



Q151	Q152

SIDE A



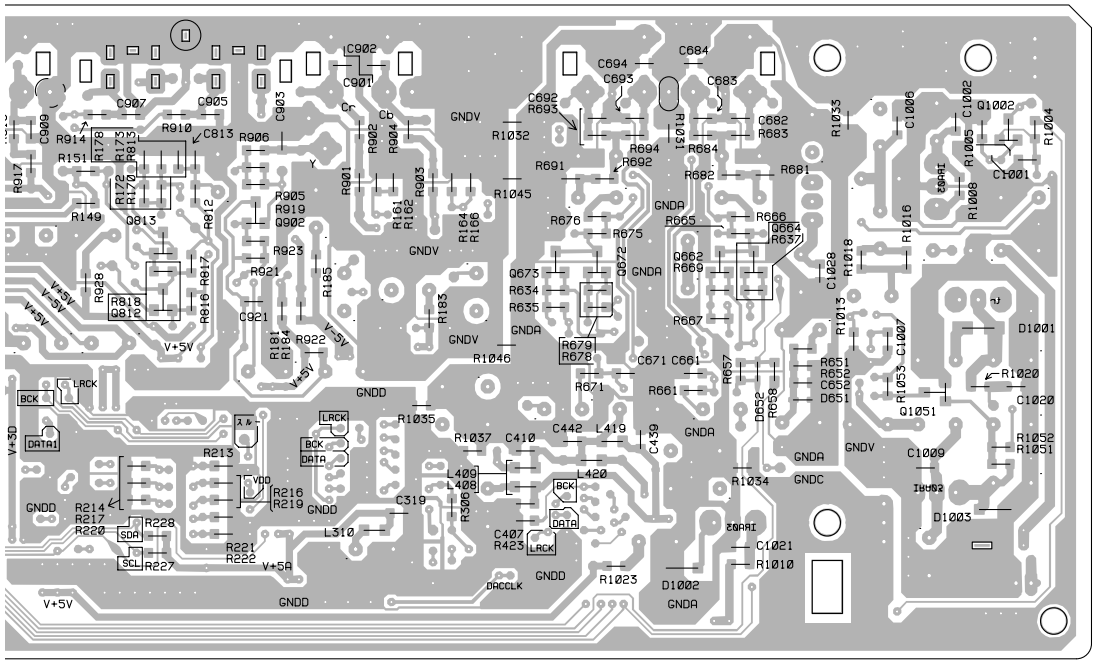
(VNP1659-A)

Q831
Q841

IC115

IC602 IC601

SIDE B



(VNP1659-A)

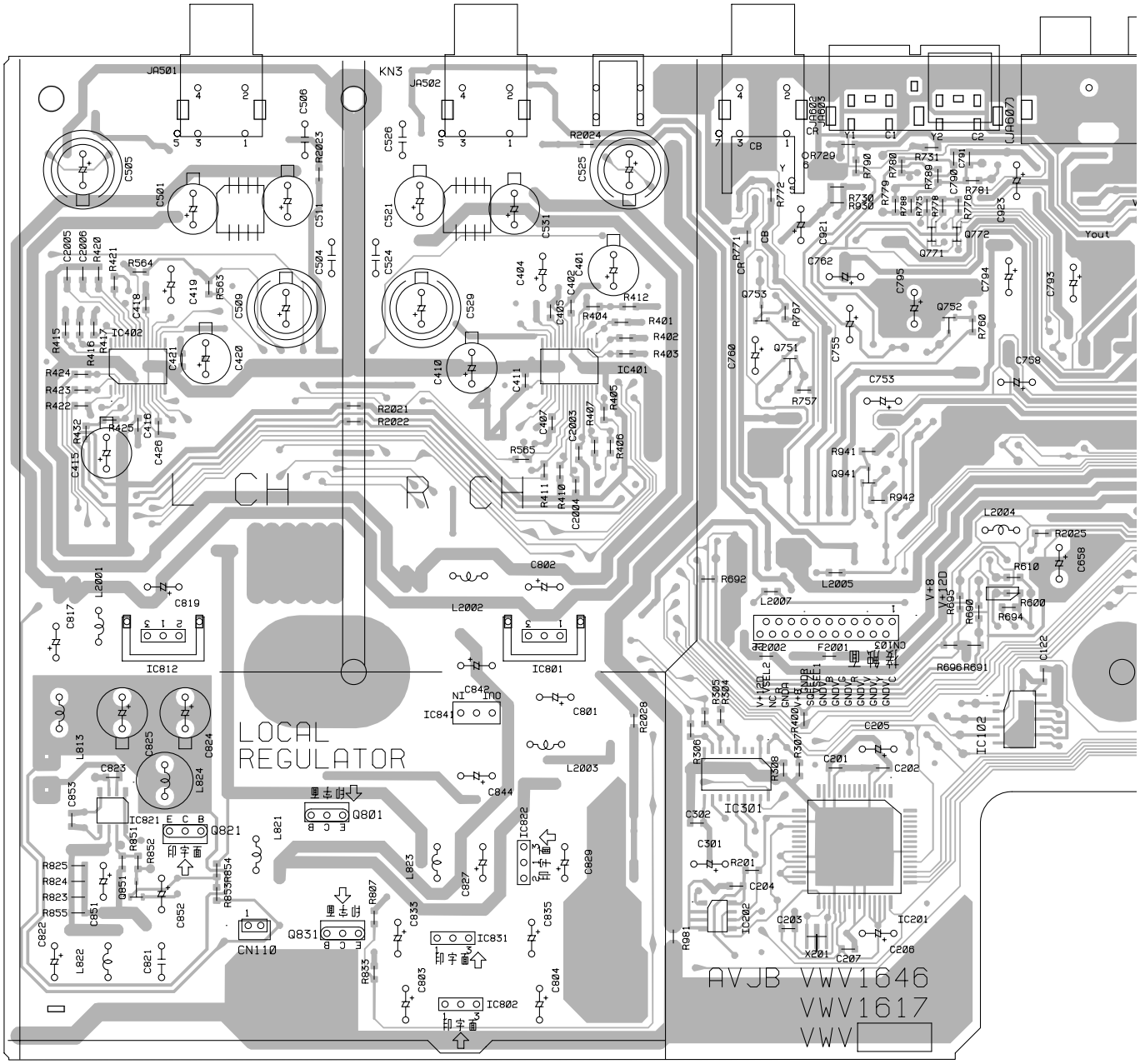
Q813 Q902
Q812

Q673 Q672 Q662 Q664

Q1051 Q1002

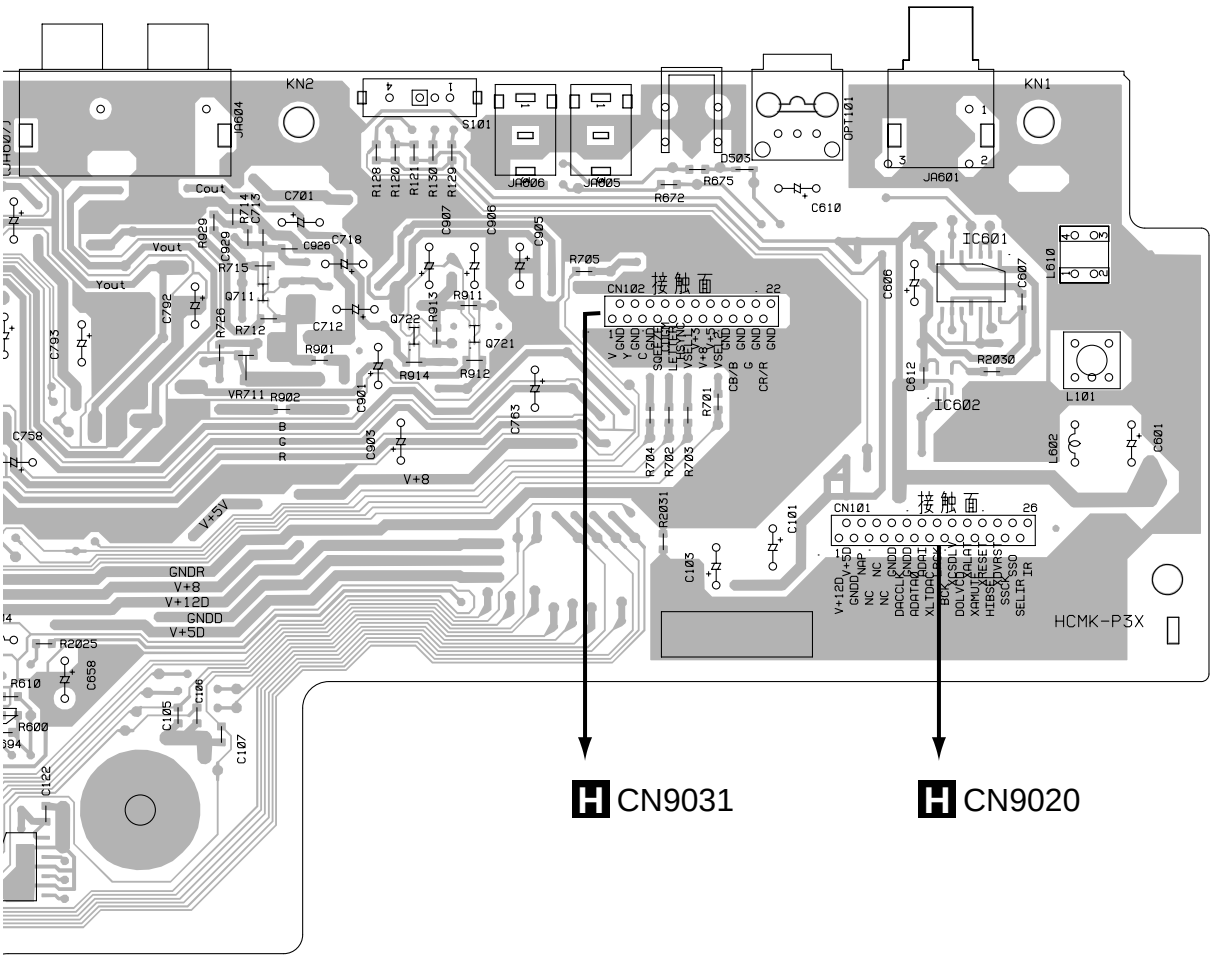
4.6 AVJB ASSY for DV-S5

IB AVJB ASSY



IC402 Q821 Q801 IC841 IC401 IC301 Q753 Q941 Q771 Q772
IC821 Q831 IC831 IC801 IC202 IC201 Q752 IC102
IC802 IC822

SIDE A



(VNP1658-B)

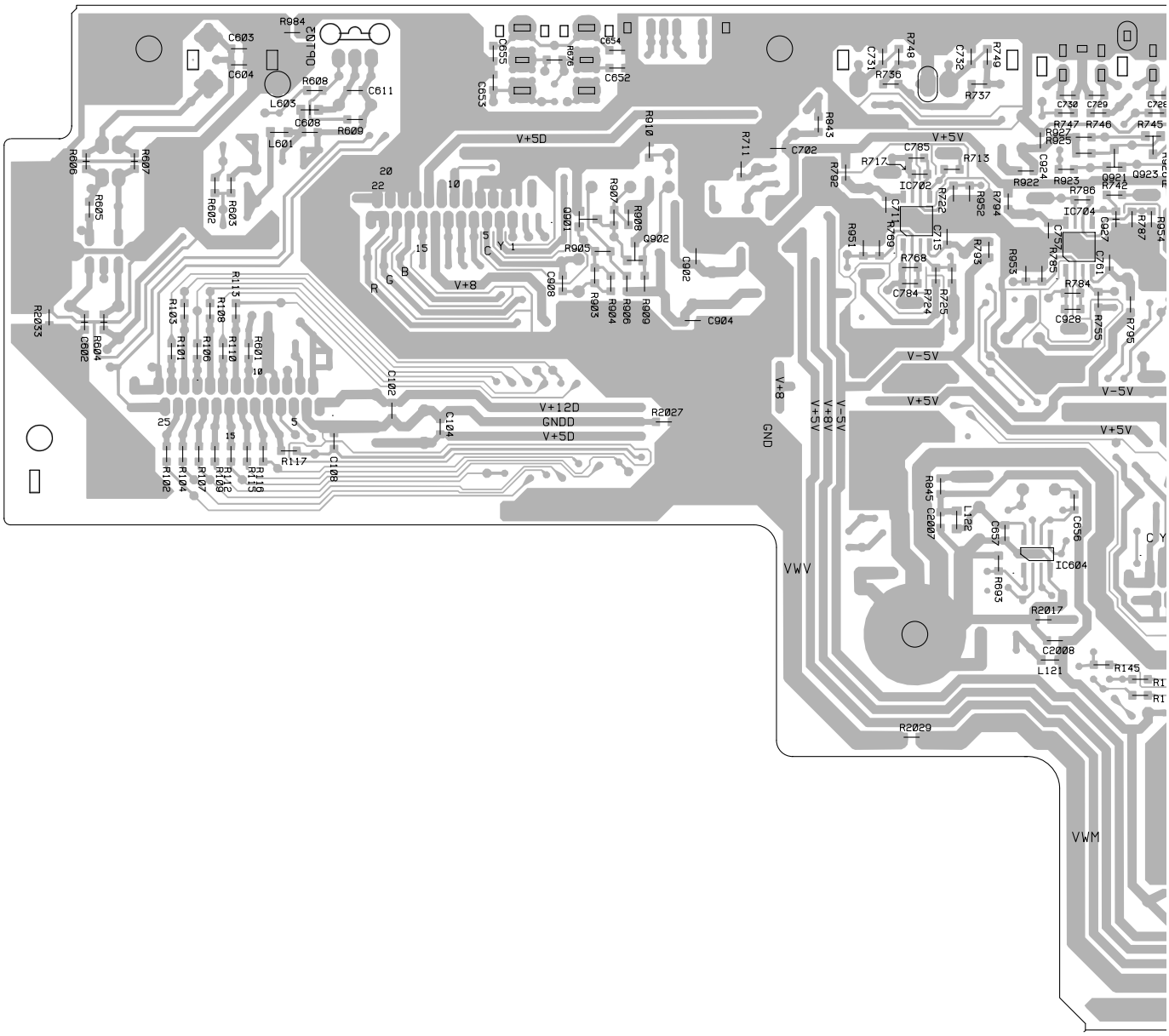
2 C102

Q711 Q722 Q721

IC601
IC602

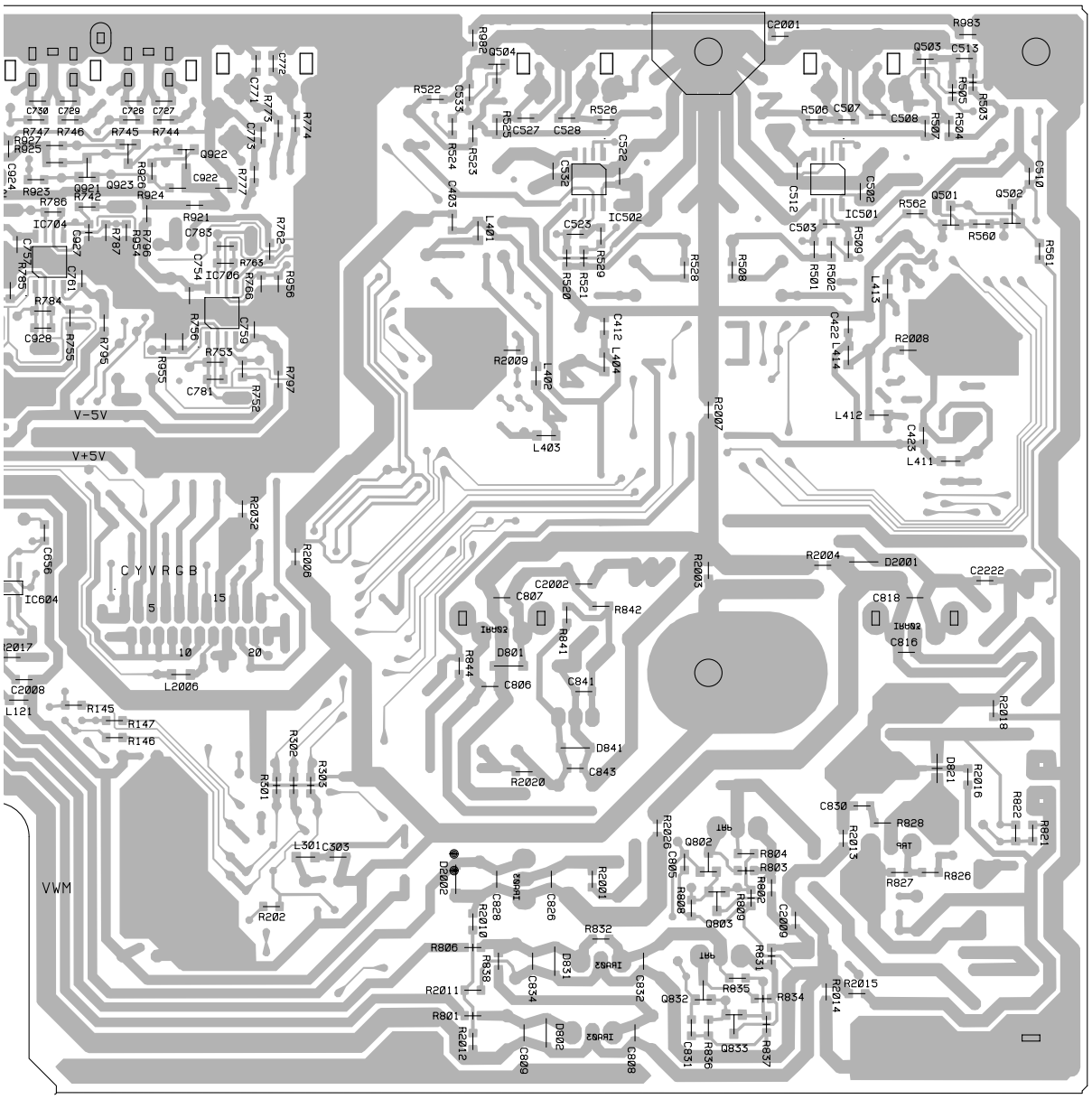
AVJB ASSY

Q901 Q902 IC702 IC604 Q921 Q IC704



SIDE B

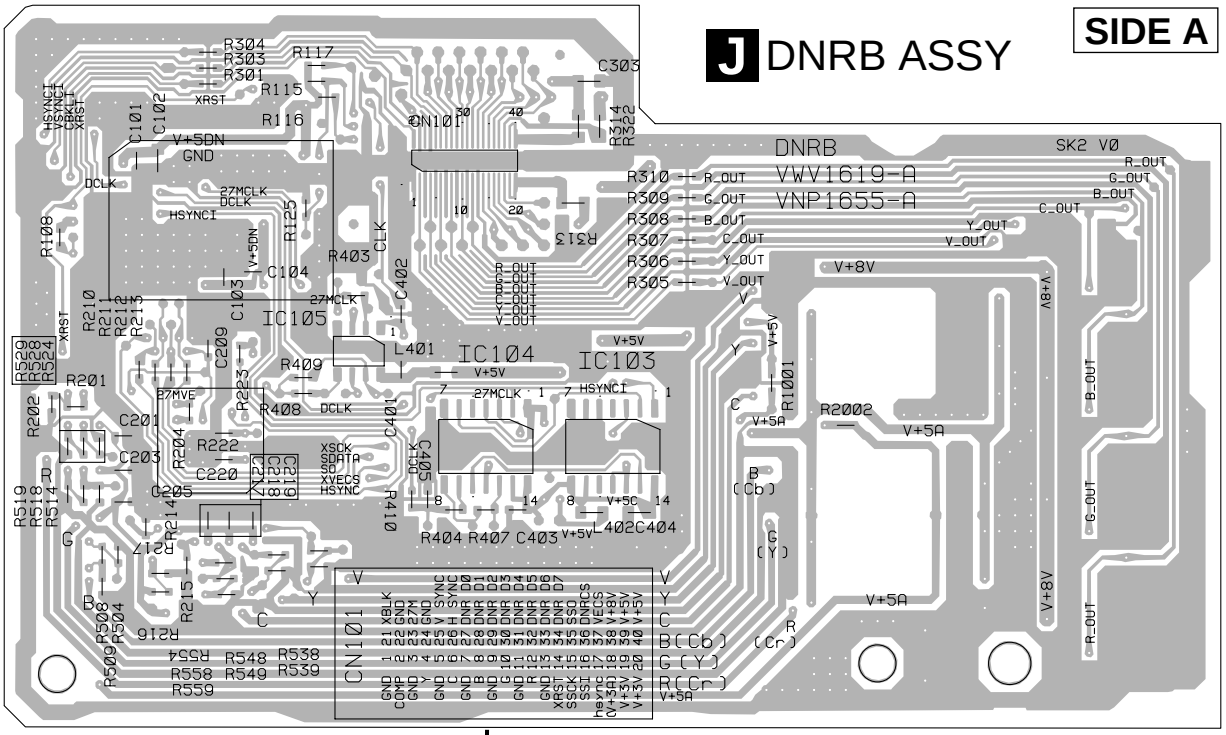
C604 Q921 Q923 Q922 Q504 Q802 Q803 IC501 Q503
IC704 IC706 Q832 Q833 IC602 Q501 Q502



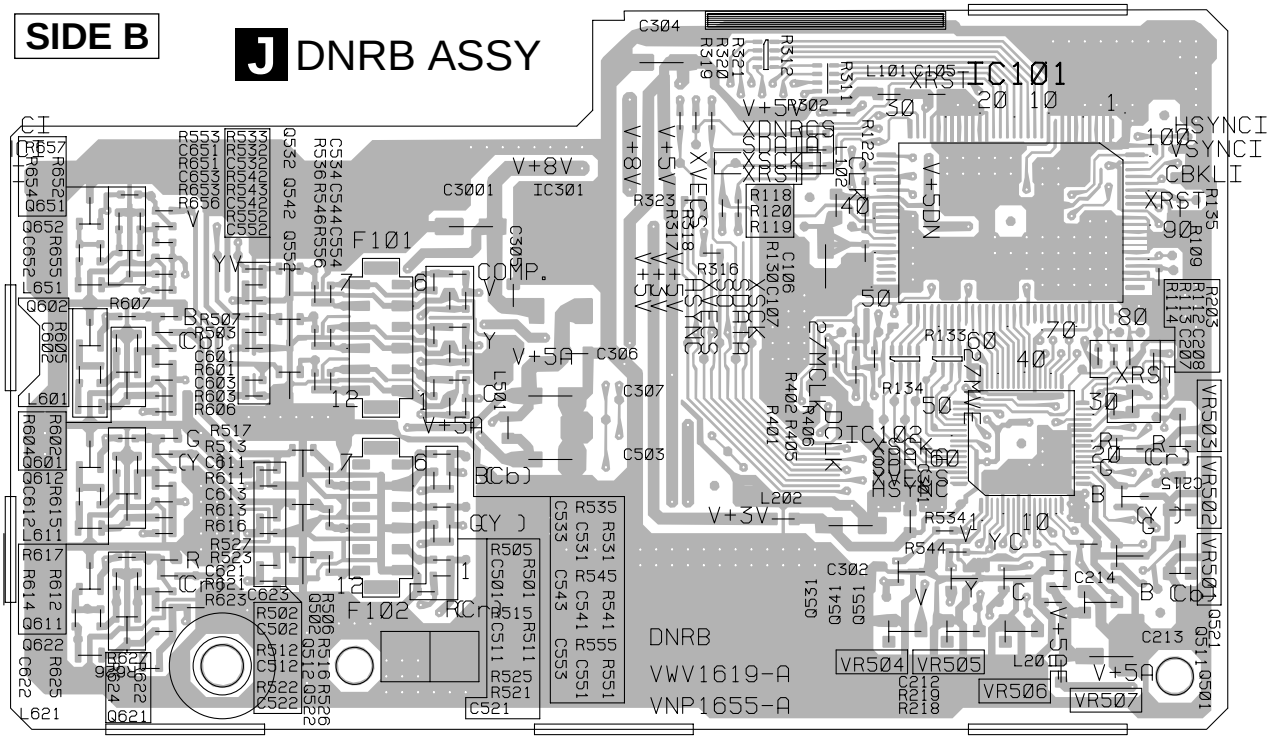
(VNP1658-B)

4.7 DNRB ASSY

IC104 IC103



(VNP1655-A)



(VNP1655-A)

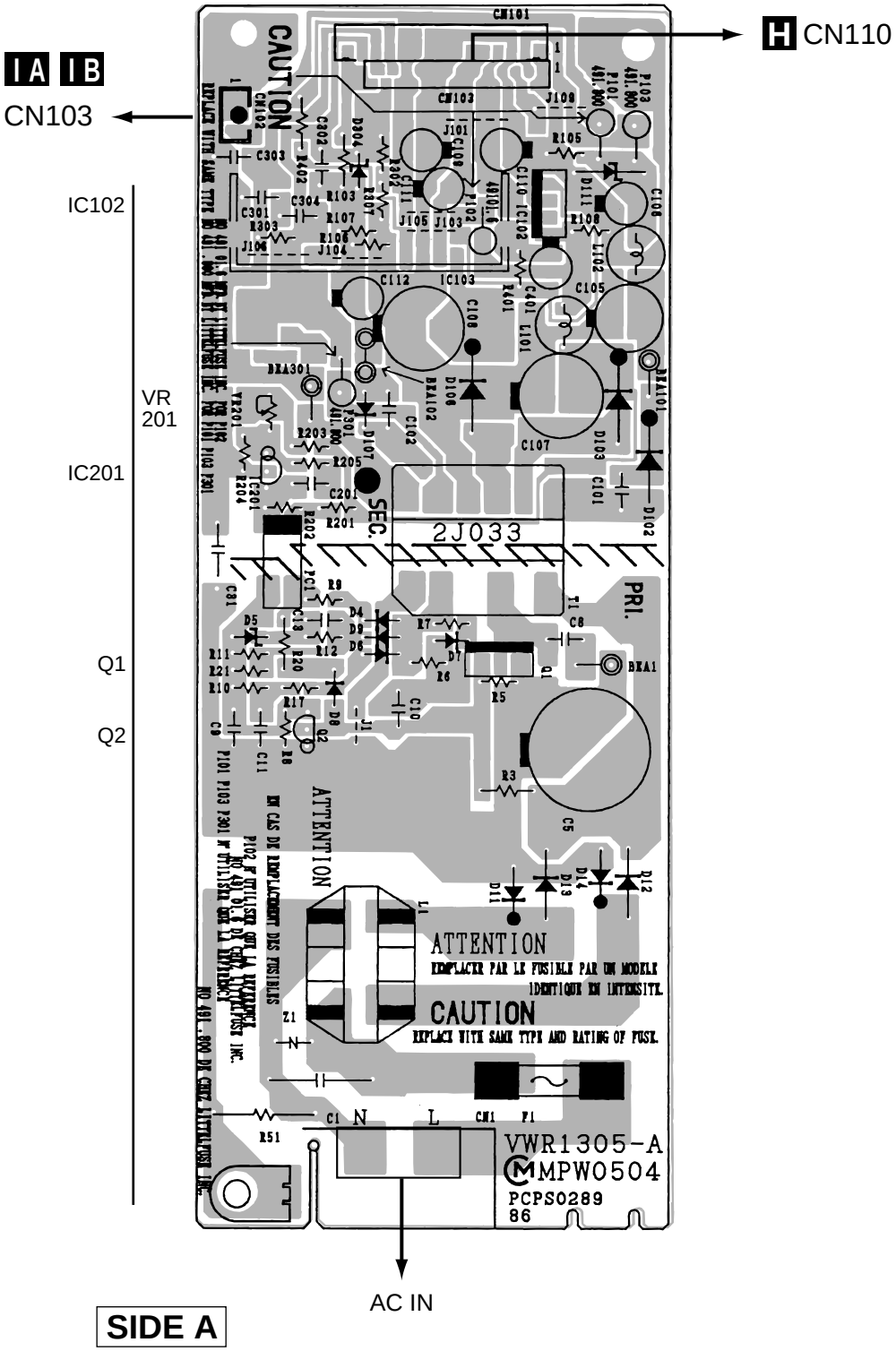
VR504 VR505 VR508 VR507 VR501-VR503

Q652 Q651
Q602 Q601
Q612 Q611
Q622 Q621

IC101
IC102

4.8 POWER SUPPLY ASSY

K POWER SUPPLY ASSY



5. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560	→	*56 x 10^1* →	*561*	*RD1/4PU 5 6 1 J*
47k	→	*47 x 10^3* →	*473*	*RD1/4PU 4 7 3 J*
0.5	→	*R50*		*RN2H R 5 0 K*
1	→	*1R0*		*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k	→	*562 x 10^1* →	*5621*	*RN1/4PC 5 6 2 1 F*

■ LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No.		Remarks
		DV-05/KU/CA	DV-S5/LB	
NSP	LOAB ASSY	VWM1798	VWM1798	
NSP	├LOMB ASSY	VWG1886	VWG1886	
NSP	└LOSB ASSY	VWG1885	VWG1885	
NSP	SMEB ASSY	VWG1968	VWG1968	
NSP	FGSB ASSY	VWG2009	VWG2009	
NSP	FLKB ASSY	VWM1861	VWM1862	
	├FLKY ASSY	VWG1978	VWG1977	
NSP	├PWSB ASSY	VWG1981	VWG1987	
NSP	└DILB ASSY	VWG1989	VWG1991	
	DVDM ASSY	VWS1349	VWS1349	
	AVJB ASSY	VWV1621	VWV1646	
	DNRB ASSY	VWV1619	VWV1619	
⚠	POWER SUPPLY ASSY	VWR1305	VWR1305	

Mark	No.	Description	Part No.

A LOMB ASSY

OTHERS

	CN401	KR CONNECTOR	B2B-PH-K-S

B LOSB ASSY

SWITCH

	S301		VSK1011

OTHERS

	CN303	KR CONNECTOR	B2B-PH-K-S
	CN302	8P FFC CONNECTOR	VKN1268
	CN301	12P FFC CONNECTOR	VKN1272

Mark	No.	Description	Part No.

C SMEB ASSY

SWITCH

	S201	DSG1016

OTHERS

	CN201	3P FFC CONNECTOR	52044-0345
	CN202	8P FFC CONNECTOR	VKN1212
		PC BOARD(SMEB)	VNP1654

D FGSB ASSY

SEMICONDUCTOR

	PC101	TLP910(O)

RESISTORS

	All Resistors	RS1/10S□□□J

Mark	No.	Description	Part No.

■ FLKB ASSY for DV-05

OTHERS

		PC BOARD(FLKB)	VNP1652

■ FLKB ASSY for DV-S5

OTHERS

		PC BOARD(FLKB)	VNP1656

EA FLKY ASSY (VWG1978)

SEMICONDUCTORS

		IC101	PE5018B
		IC102	S-806D
		Q101	DTD113ES
		D102	EP05Q04
		D101	SLP4118C51H

SWITCHES AND RELAYS

		S108–S113	RSG1030

CAPACITORS

		C101–C103, C105, C117	CEJA470M6R3
		C108, C110–C113, C122	CKSQYB102K50
		C106, C107, C114–C116	CKSQYF104Z25
		C119, C120, C170	CKSQYF104Z25

RESISTORS

		All Resistors	RS1/10S□□□J

OTHERS

	CN103	CONNECTOR 4P	04P-FJ
	CN102	CONNECTOR 6P	06P-FJ
		REMOTE RECEIVER UNIT	GP1U28X
	V101	FL TUBE	VAW1046
		SPACER	VEC1599
	CN101	14P CONNECTOR	VKN1274
		HOLDER	VNF1087
	X101	CERAMIC RESONATOR (5MHz)	VSS1104

EB FLKY ASSY (VWG1977)

SEMICONDUCTORS

		IC101	PE5018B
		IC102	S-806D
		Q101	DTD113ES
		Q102	PDTA124EK
		D102	EP05Q04

SWITCHES AND RELAYS

		S101–S105	RSG1030

CAPACITORS

		C101, C103, C117	CEJA470M6R3
		C108, C110–C113	CKSQYB102K50
		C106, C107, C114–C116, C119	CKSQYF104Z25
		C123, C170	CKSQYF104Z25

RESISTORS

		ALL Resistors	RS1/10S□□□J

OTHERS

	CN102	CONNECTOR 7P	07P-FJ
		REMOTE RECEIVER UNIT	GP1U28X
	J101	CONNECTOR ASSY	PF02NN2D12
	V101	FL TUBE	VAW1046
		SPACER	VEC1599
	CN101	14P CONNECTOR	VKN1274
		HOLDER	VNF1087
	X101	CERAMIC RESONATOR (5MHz)	VSS1104

FA PWSB ASSY (VWG1981)

SEMICONDUCTORS

		Q201	PDTA124EK
		D202	SLP4118C51H
		D201	SLP9118C51H

SWITCHES AND RELAYS

		S201, S202	RSG1030

CAPACITORS

		C201	CKSQYF104Z25

RESISTORS

		All Resistors	RS1/10S□□□J

OTHERS

	CN201	CONNECTOR 6P	06R-FJ

FB PWSB ASSY (VWG1987)

SEMICONDUCTORS

		Q201	PDTC124EK
		D201–D204	SLP9118C51H

SWITCHES AND RELAYS

		S201	RSG1030

CAPACITORS

		C201	CKSQYF104Z25

RESISTORS

		All Resistors	RS1/10S□□□J

OTHERS

	CN201	CONNECTOR 7P	07R-FJ

Mark	No.	Description	Part No.
GA	**DILB ASSY (VWG1989)**		
	SEMICONDUCTORS		
	D301		MA111
	OTHERS		
	CN301	CONNECTOR 7P	04R-FJ
	PL301	LAMP	VEL1022
GB	**DILB ASSY (VWG1991)**		
	SEMICONDUCTORS		
	D301		MA111
	OTHERS		
	PL301	LAMP	VEL1022
H	**DVDM ASSY**		
	SEMICONDUCTORS		
	IC301		ADC1175CIJMX
	IC371		BA10393F
⚠	IC401		BA178M08FP
	IC352		BA5982FP
	IC251		BA6195FP
	IC901		CY2081SL-638
	IC702		HM514800CJ-7
	IC101		LA9701M
	IC201		LC78651W
	IC802		MB811171622A-100FN
	IC801		MB86371C
	IC261, IC302		NJM2100M
	IC601		PD3381A
	IC701		PD4833A
	IC602		PDK036A
	IC501		PE5012A
	IC502		SRM2B256SLMX70
	IC604		TC551001BFL-85
	IC504		TC74HC573AF
	IC303		TC74HCU04AF
	IC807, IC808		TC74LCX245FT
	IC810		TC74VHC00FT
	IC506, IC605		TC74VHC139FT
	IC505		TC74VHC20FT
	IC805, IC806, IC809		TC74VHC541FT
	IC507		TC74VHCT245AFT
	IC703		TC74VHCT541AFT
	IC903, IC904, IC906		TC7WU04F
	IC603		VYW1599
⚠	Q401		2SB1260
	Q603		DTA114EK
	Q107, Q602		DTC114EK
	Q601, Q661, Q662, Q803		DTC114TK
	Q108		HN1K03FU
	Q102, Q106, Q109		IMT1A
	Q101, Q105, Q112–Q114, Q201		IMX1
	Q402		IMX1
	Q103, Q281, Q301		IMZ1A
	D301		KV1410
	D371, D372		MA152WK
	D601		RB501V-40
	COILS AND FILTERS		
	F6630, F6640, F6710	CHIP BEADS	DTF1067
	F4010, F4020, F4030	CHIP BEADS	DTF1070
	F4040, F4050, F4060	CHIP BEADS	DTF1070
	F8010, F8050, F8900	CHIP BEADS	DTF1070
	F8920, F8990	CHIP BEADS	DTF1070
	F8450, F8460	FERRITE BEADS	VTF1073
	L304	(1.5mH)	VTL1059
	L101, L303	(10mH)	VTL1061
	L804	(22µH)	VTL1067
	L6740, L6750, L6760	CHIP BEADS	VTL1075
	L6770, L6780, L6790	CHIP BEADS	VTL1075
	L6800, L6810, L6820	CHIP BEADS	VTL1075
	L9050, L9580, L9590	CHIP BEADS	VTL1075
	L9620, L9630, L9870	CHIP BEADS	VTL1075
	L9880, L9890, L9960	CHIP BEADS	VTL1075
	L8420	CHIP BEADS	VTL1108
	CAPACITORS		
	C605		CCSRCH100D50
	C123, C282, C610, C611, C716		CCSRCH101J50
	C903		CCSRCH101J50
	C206, C210, C211, C240		CCSRCH151J50
	C126, C307, C905		CCSRCH180J50
	C116		CCSRCH220J50
	C152, C208		CCSRCH221J50
	C135		CCSRCH270J50
	C322		CCSRCH330J50
	C352, C360		CCSRCH331J50
	C104–C108, C124, C209, C314		CCSRCH470J50
	C324		CCSRCH470J50
	C117, C122		CCSRCH471J50
	C128, C309		CCSRCH560J50
	C127, C308		CCSRCH5R0C50
	C134		CCSRCH680J50
	C145, C146		CCSRCH820J50
	C129, C142, C414, C832		CEV101M10
	C113, C139, C254, C358, C409		CEV220M16
	C411		CEV220M16
	C801, C802, C811, C814, C836		CEV221M4
	C111, C147, C149, C205, C207		CEV470M6R3
	C301, C304, C368, C401, C403		CEV470M6R3
	C405, C407, C807, C812, C815		CEV470M6R3

Mark	No.	Description	Part No.
	C140, C223, C224, C252, C264		CKSQYB105K10
	C312, C803, C804, C813, C817		CKSQYB105K10
	C819, C821, C823, C826		CKSQYB105K10
	C829–C831, C833		CKSQYB105K10
	C217, C302, C305, C417		CKSQYF105Z16
	C216, C313, C323		CKSRYB102K50
	C133, C136, C203, C220, C225		CKSRYB103K50
	C253, C255, C266, C320, C321		CKSRYB103K50
	C616, C662, C703, C711		CKSRYB103K50
	C101, C102, C114, C118, C121		CKSRYB104K16
	C130, C138, C153, C204		CKSRYB104K16
	C212, C213, C227, C228		CKSRYB104K16
	C231, C232, C263, C311		CKSRYB104K16
	C315–C317, C362–C365, C413		CKSRYB104K16
	C805, C806, C808, C810		CKSRYB104K16
	C281		CKSRYB222K50
	C137, C354, C357		CKSRYB223K25
	C237, C239, C251, C261		CKSRYB472K50
	C109, C110, C120, C131, C143		CKSRYF104Z16
	C148, C150, C202, C215		CKSRYF104Z16
	C221, C222, C226, C230, C235		CKSRYF104Z16
	C265, C303, C306, C319, C359		CKSRYF104Z16
	C366, C367, C369–C372, C402		CKSRYF104Z16
	C404, C406, C408, C410, C412		CKSRYF104Z16
	C415, C502, C503, C506–C509		CKSRYF104Z16
	C603, C604, C606–C609		CKSRYF104Z16
	C612–C615, C617–C620, C661		CKSRYF104Z16
	C691, C702, C704–C710		CKSRYF104Z16
	C712–C715, C717–C719, C725		CKSRYF104Z16
	C818, C820, C822, C824, C825		CKSRYF104Z16
	C827, C828, C834, C838, C840		CKSRYF104Z16
	C842, C843, C845, C847, C907		CKSRYF104Z16
	C910, C915		CKSRYF104Z16
	C816, C837, C844, C848 (2.2µF/6.3V)		VCG1030
	C299, C328, C505, C599 (0.47µF/10V)		VCG1032
	C602, C722, C723, C799, C902		VCG1032
	VC301 (40pF)		VCM1010
	VC901 (30pF)		VCM1011

RESISTORS

	R123 (39Ω)	ACN7047
	R607–R611, R723 (47Ω)	DCN1090
	R505, R506, R615, R616, R620 (10kΩ)	DCN1094
	R692, R708, R709, R733, R734 (10kΩ)	DCN1094
	R740, R741, R748, R749 (10kΩ)	DCN1094
	R121, R501–R504, R603–R606 (22Ω)	DCN1104
	R691, R712, R713, R715, R716 (22Ω)	DCN1104
	R731, R732, R816, R818, R819 (22Ω)	DCN1104
	R833–R835 (22Ω)	DCN1104
	R1020, R162, R173, R2010, R2020	RS1/10S0R0J
	R243, R2510, R301, R3010, R302	RS1/10S0R0J
	R3020, R3050, R3510, R3520	RS1/10S0R0J
	R405–R407, R5010, R5020, R6010	RS1/10S0R0J
	R6020, R6030, R6040, R672, R673	RS1/10S0R0J
	R7010, R7020, R8020, R8030, R839	RS1/10S0R0J
	R891, R9010, R9020, R9030, R9040	RS1/10S0R0J
	R9510, R9520, R982–R984	RS1/10S0R0J
	R202	RS1/10S101J
	R807	RS1/16S1500F
	R164	RS1/16S5600F
	Other Resistors	RS1/16S□□□J

OTHERS

	FLEXIBLE CABLE(07P)	VDA1681
CN106	7P CONNECTOR	VKN1299
CN201	CONNECTOR	VKN1324
CN602	14P CONNECTOR	VKN1418
CN120	24P CONNECTOR	VKN1464
CN1030	12P CONNECTOR	VKN1471
CN9031	22P CONNECTOR	VKN1477
CN110, CN9020	26P CONNECTOR	VKN1479
CN180	CONNECTOR	VKN1485
CN802	CONNECTOR	VKN1529
	LABEL	VRW1750
X601	CERAMIC RESONATOR(20MHz)	VSS1114
X501	CERAMIC RESONATOR(10MHz)	VSS1115
X901	CRYSTAL RESONATOR (13.824MHz)	VSS1129

I A AVJB ASSY (VWV1621)

SEMICONDUCTORS

	IC663	BA4560F
	IC1002	IR3M03AN
	IC901, IC902	MC14577CF
	IC201	MN19425AA1
	IC661, IC662	NJM4556AM
⚠	IC1021	NJM78M05FA
⚠	IC1001	NJM78M08FA
⚠	IC1004	NJM79M05FA
	IC301	PD0236AM
	IC401	PE8001A
	IC202	TC4W53F
	IC115	TC74HCT7007AF
	IC601	TC74HCU04AF
	IC602	TC7SET08F
	Q652, Q664, Q673, Q901	2PB709A
	Q1002, Q142, Q143, Q151, Q152	2PD601A
	Q662, Q672, Q813, Q902, Q903	2PD601A
⚠	Q1001	2SB1260
	Q1004	2SB1566
	Q1021	2SC1740S
	Q653, Q654	2SD2114K
	Q414, Q812	PDTA124EK
	Q1051, Q651, Q663	PDTC124EK
	Q144, Q146, Q661	UMD2N
	Q811, Q831, Q841	UMZ1N

Mark	No.	Description	Part No.
	D1001		EC10QS04
	D1002, D1003		EP10QY03
	D601		MA111

COILS AND FILTERS

	L421	CHIP INPEDER	DTL1028
	L118		LAU1R2J
	L1001, L1002, L1004		LFA470J
	L601	PULSE TRANSFORMER	PTL1003
	L604	NOISE FILTER	RTF1167
	F115, F301, F310, F408, F409	CHIP SOLID INDUCTOR	VTF1096
	F419, F420, F603, F606, F622		VTF1096
	L1003 (47µH)		VTL1118

CAPACITORS

	C171, C189	CCSQCH150J50
	C1007	CCSQCH181J50
	C661, C671	CCSQCH221J50
	C662, C672	CCSQCH330J50
	C621, C901–C909	CCSQCH470J50
	C682, C683, C692, C693	CCSQCH681J50
	C139–C141, C408, C419, C601	CEAT101M10
	C606, C618, C651, C917, C918	CEAT101M10
	C1027, C615, C667	CEAT101M16
	C801, C807	CEAT1R0M50
	C1051	CEAT220M25
	C1026	CEAT221M16
	C449	CEAT221M6R3
	C811, C821, C841	CEAT470M10
	C125, C126, C411	CEAT470M16
	C613, C665, C675	CEAT470M25
	C804–C806, C809, C831, C832	CEAT471M10
	C834, C845, C920, C922	CEAT471M10
	C812	CEAT471M16
	C1005, C1012, C1023	CEHAQ101M10
	C1016, C161	CEHAQ101M16
	C450	CEHAQ221M10
	C1003	CEHAQ2R2M50
	C1010, C418	CEHAQ470M16
	C616	CEHAQ470M25
	C1008, C1014, C1017	CEHAQ471M10
	C1020	CKSQYB102K50
	C1001, C1002, C1004, C1009, C1011	CKSQYF103Z50
	C1021, C1022, C1024, C1025, C1028	CKSQYF103Z50
	C310, C319, C407, C410, C429	CKSQYF103Z50
	C439, C442, C602, C921	CKSQYF103Z50
	C123, C124, C131, C133, C135	CKSQYF104Z25
	C162, C195, C209, C218, C223	CKSQYF104Z25
	C226, C237, C258, C603, C604	CKSQYF104Z25
	C607–C609, C611, C612, C614	CKSQYF104Z25
	C622, C652, C664, C666, C684	CKSQYF104Z25
	C833, C842–C844, C911–C914	CKSQYF104Z25
	C923	CKSQYF104Z25
	C694	CKSQYF104Z50
	C118, C409, C420, C438	CKSQYF105Z16
	C813	CKSQYF225Z16
	C1015	CQMBA104J50

RESISTORS

	R910, R914	RN1/10SC62R0D
	R906	RN1/10SC68R0D
	R902, R904, R908, R912, R916	RN1/10SC75R0D
	R918	RN1/10SC75R0D
	R825	RN1/10SE1001D
	R662, R672, R812	RN1/10SE1002D
	R681, R691	RN1/10SE1003D
	R173	RN1/10SE1502D
	R661, R671	RN1/10SE1602D
	R178	RN1/10SE1800D
	R682–R684, R692–R694	RN1/10SE2200D
	R149, R151, R698, R699	RN1/10SE2201D
	R663, R673	RN1/10SE2702D
	R152, R188, R189	RN1/10SE4700D
	R170–R172, R179	RN1/10SE5100D
	R153	RN1/10SE5601D
	R665, R666, R675, R676	RN1/10SE6200D
	R813	RN1/10SE7500D
	Other Resistors	RS1/10S□□□J

OTHERS

	CN902	2x4P MINI DIN SOCKET	AKP7023
	CN103	CONNECTOR POST	B2B-PH-K-S
	JA621, JA622	JACK	RKN1004
	JA602	OPTICAL OUTPUT JACK	TOTX178
		PCB BINDER	VEF1040
	JA601	JACK	VKB1074
	JA681	4P PIN JACK	VKB1098
	JA904	2P PIN JACK	VKB1101
	JA901	3P PIN JACK	VKB1112
	CN102	22P CONNECTOR	VKN1253
	CN101	26P CONNECTOR	VKN1257
		SCREW PLATE	VNE1948
	KN601–KN603	EARTH METAL FITTING	VNF1084
	X201	CRYSTAL RESONATOR (33.86MHz)	VSS1130

IB AVJB ASSY (VWV1646)

SEMICONDUCTORS

	IC821	IR3M03AN
	IC702, IC706	MC14577CF
	IC501, IC502	NJM5532MD
	IC841	NJM78L05A
	IC802	NJM78M05FA
	IC801, IC831	NJM78M08FA
	IC822	NJM79M05FA
	IC812	NJM79M08FA
	IC301	PD0236AM
	IC201	PD2058A

Mark	No.	Description	Part No.
	IC401, IC402		PE8001A
	IC202		TC4W53F
	IC102		TC74HCT7007AF
	IC601		TC74HCU04AF
	IC602		TC7SET08F
	IC604		TC7WU04F
	Q502, Q921		2PB709A
	Q751, Q753, Q802, Q832		2PD601A
	Q901, Q902, Q922, Q923		2PD601A
	Q801, Q821, Q831		2SB1566
	Q503, Q504		2SD2114K
	Q941		PDTA124EK
	Q501, Q851		PDTC124EK
	Q771, Q772		UMD2N
	Q711, Q721, Q722		UMZ1N
	D821		EC10QS04
	D2001, D2002, D801, D802, D831		EP10QY03
	D841		EP10QY03
	D503		MA111

COILS AND FILTERS

	L2004		LAU2R2J
	L602	COIL	RTF1167
	F121, F122, F301, F401–F404	CHIP SOLID INDUCTOR	VTF1096
	F411–F414, F601, F603, F676		VTF1096

CAPACITORS

	C853		CCSQCH101J50
	C823		CCSQCH181J50
	C656		CCSQCH220J50
	C784, C785		CCSQCH300J50
	C503, C523		CCSQCH330J50
	C652, C653, C727–C732		CCSQCH470J50
	C771–C773		CCSQCH470J50
	C507, C508, C527, C528		CCSQCH681J50
	C103, C205, C206, C301, C601		CEAT101M10
	C606, C610, C701, C755, C760		CEAT101M10
	C792, C793, C901, C903, C921		CEAT101M10
	C923		CEAT101M10
	C101, C822		CEAT101M16
	C401, C410, C415, C420		CEAT102M6R3
	C852		CEAT220M25
	C658, C718		CEAT221M6R3
	C712, C753, C762, C763, C907		CEAT470M10
	C404, C419, C817		CEAT470M16
	C501, C511, C521, C531		CEAT471M10
	C824, C825		CEAT471M16
	C851		CEAT471M6R3
	C505, C509, C525, C529		CEBA470M10
	C819, C827, C829		CEHAQ101M10
	C801–C803, C833, C842		CEHAQ2R2M50
	C2001, C2003–C2006, C513, C533		CKSQYB102K50
	C830		CKSQYB102K50
	C422, C805, C831		CKSQYF103Z50
	C102, C104, C2002, C2009, C201		CKSQYF104Z25
	C2018, C202–C204, C207, C2222		CKSQYF104Z25
	C302, C303, C402, C403, C407		CKSQYF104Z25
	C412, C416, C423, C426, C502		CKSQYF104Z25
	C512, C522, C532, C602–C604		CKSQYF104Z25
	C607, C608, C611, C612		CKSQYF104Z25
	C654, C655, C702, C754, C759		CKSQYF104Z25
	C790, C791, C806–C809, C816		CKSQYF104Z25
	C818, C826, C828, C832, C834		CKSQYF104Z25
	C841, C843, C902, C904, C922		CKSQYF104Z25
	C924, C929		CKSQYF104Z25
	C122, C2007, C405, C411, C418		CKSQYF105Z16
	C421, C657		CKSQYF105Z16
	C711, C713, C715		CKSQYF225Z16
	C504, C524		CQHA221J2A
	C821, C844		CQMBA104J50

RESISTORS

	R745, R747		RN1/10SC62R0D
	R777		RN1/10SC68R0D
	R744, R746, R748, R749		RN1/10SC75R0D
	R773, R774		RN1/10SC75R0D
	R907		RN1/10SE1001D
	R501, R520, R714		RN1/10SE1002D
	R503, R522		RN1/10SE1003D
	R508, R528		RN1/10SE1602D
	R504, R506, R507, R523		RN1/10SE2200D
	R525, R526		RN1/10SE2200D
	R724, R725		RN1/10SE2201D
	R509, R529		RN1/10SE2701D
	R502, R521		RN1/10SE2702D
	R717, R722, R768, R769		RN1/10SE4700D
	R904, R952		RN1/10SE5601D
	R711		RN1/10SE6200D
	Other Resistors		RS1/10S□□□J

OTHERS

	604	2P RCA PINJACK	AKB7076
	CN603	4P MINI DIN SOCKET	AKP7023
	CN110	CONNECTOR POST	B2B-PH-K-S
		SCREW	BBZ30P080FCC
	L564, L565	CHIP INPEDER	DTL1028
	JA101	OPTICAL LINK OUT	GP1F32T
	L2001–L2003, L823		LFA101J
	L813, L821, L822		LFA470J
	L101	PULSE TRANSFORMER	PTL1003
	JA605, JA606	JACK	RKN1004
		PCB BINDER	VEF1040
	JA601	JACK	VKB1074
	JA501	JACK	VKB1095
	JA502	JACK	VKB1096
	JA602	JACK	VKB1112
	CN102	22P CONNECTOR	VKN1253

Mark	No.	Description	Part No.
	CN101	26P CONNECTOR	VKN1257
		SCREW PLATE	VNE1948
	KN1–KN3	EARTH METAL FITTING	VNF1084
		PC Board (AVJB)	VNP1658
	X201	CERAMIC RESONATOR(24MHz)	VSS1118
	L824	(47µH)	VTL1118

J DNRB ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC301		BA178M05FP
	IC101		CXD1854Q
	IC102		MC44724A
	IC103		TC74HCT02AF
	IC104		TC74HCT74AF
	IC105		TC7WU04F
	Q501, Q502, Q511, Q512		2PB709A
	Q521, Q522, Q541, Q542		2PB709A
	Q551, Q552, Q622		2PB709A
	Q621		2PD601A

COILS AND FILTERS

Mark	No.	Description	Part No.
	F1102, F201, F202, F501	CHIP BEADS	DTF1070
	F101, F102	VIDEO FILTER	VTF1147
	L9404, L9409	CHIP BEADS	VTL1074
	L621	(3.3µH)	VTL1113

CAPACITORS

Mark	No.	Description	Part No.
	C402		CCSRCH101J50
	C622		CCSRCH470J50
	C106, C213, C302, C304, C307		CEV470M6R3
	C301, C303, C305, C306, C404		CKSQYF104Z25
	C102		CKSQYF105Z16
	C101, C103–C105, C107, C201		CKSRYF104Z16
	C203, C205, C207, C209, C212		CKSRYF104Z16
	C214, C215, C217–C220, C401		CKSRYF104Z16
	C403, C501, C502, C511, C512		CKSRYF104Z16
	C521, C522, C541, C542		CKSRYF104Z16
	C551, C552, C623		CKSRYF104Z16

RESISTORS

Mark	No.	Description	Part No.
	R133, R134, R311, R312		RA4C470J
	R313, R314, R322, R9101		RS1/10S0R0J
	R9401, R9402		RS1/10S0R0J
	R217, R219		RS1/16S1001F
	R214, R215		RS1/16S1801F
	R216, R218		RS1/16S2201F
	R505, R515, R525, R545, R555		RS1/16S5600F
	VR501–VR503, VR505, VR506(220Ω)		VCP1179
	Other Resistors		RS1/16S□□□J

OTHERS

Mark	No.	Description	Part No.
	CN101	CONNECTOR	VKN1530

K POWER SUPPLY ASSY

OTHERS

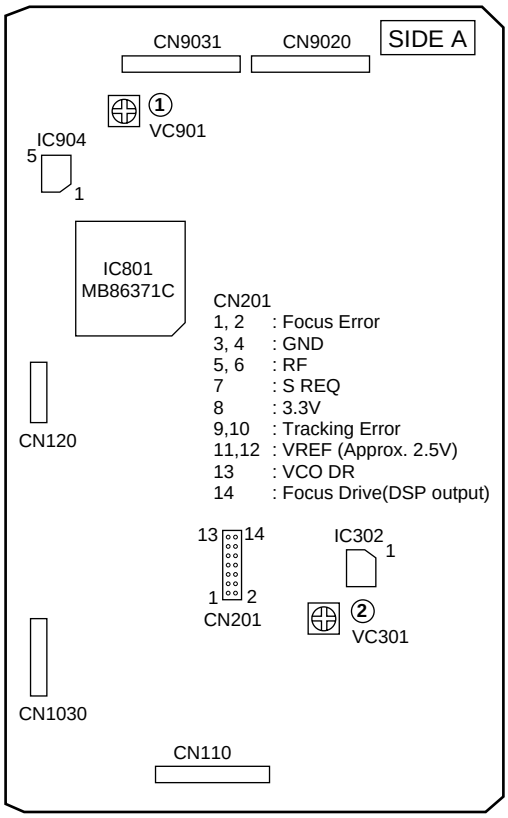
Mark	No.	Description	Part No.
⚠	P101, P103, P301	PROTECTOR(800mA)	AEK7008
⚠	P102	PROTECTOR(1.6A)	AEK7012
⚠	F1	FUSE (1.6A)	REK1077

6. ADJUSTMENT

6.1 ADJUSTMENT ITEMS AND LOCATION

■ Adjustment Points (PCB Part)

DVDM ASSY

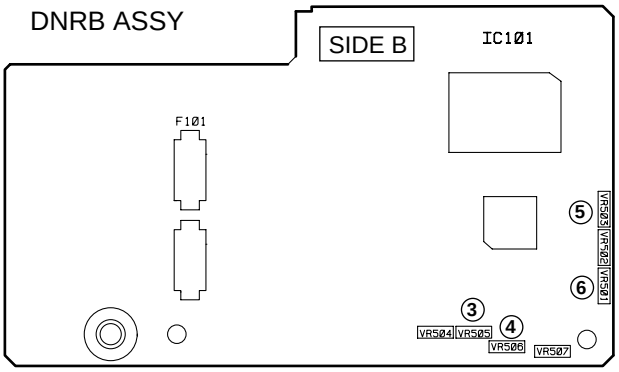


■ Adjustment Items

[Electrical Part]

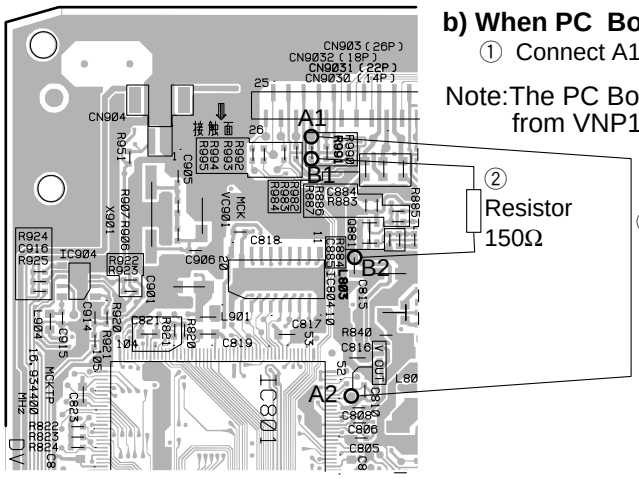
① 16MHz Master Clock Adjustment
② VCO Offset Adjustment
③ Y Level Adjustment
④ C Level Adjustment
⑤ Cr Level Adjustment
⑥ Cb Level Adjustment

DNRB ASSY



■ How to output the VIDEO SIGNAL without the DNRB ASSY

DVDM ASSY



a) When PC Board No. is VNP1651

① Connect A1 and A2 with the wire jumper
② Connect B1 and B2 with the Resistor(150Ω)

b) When PC Board No. is VNP1684

① Connect A1 and A2 with the wire jumper

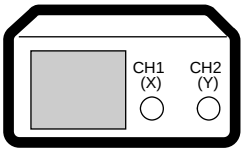
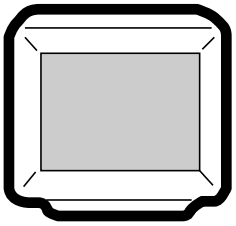
Note:The PC Board was running-changed from VNP1651 to VNP1684

② Resistor 150Ω

① Wire Jumper

location
A1:R991(CN9031 20pin)
A2:IC801 45pin
B1:R991
B2:L803(Resistor 0Ω)

6.2 JIGS AND MEASURING INSTRUMENTS

DVD test disc (DVD-MJK1)	⊖ Screwdriver(small)	⊕ Screwdriver(small)	 Dual-trace oscilloscope (with delay) Frequency band ≧ 40MHz
Frequency counter Display digit ≧ 8-digit	 TV monitor		

6.3 NECESSARY ADJUSTMENT POINTS

When → Adjustment Points

■ EXCHANGE PCB ASSY

Exchange board
AVJB ASSY

→ **Mechanical point** _____

→ **Electric point** _____

Exchange board
DVDM ASSY

→ **Mechanical point** _____

→ **Electric point** _____

Note : ① and ② are adjusted already.

Exchange board
DNRB ASSY

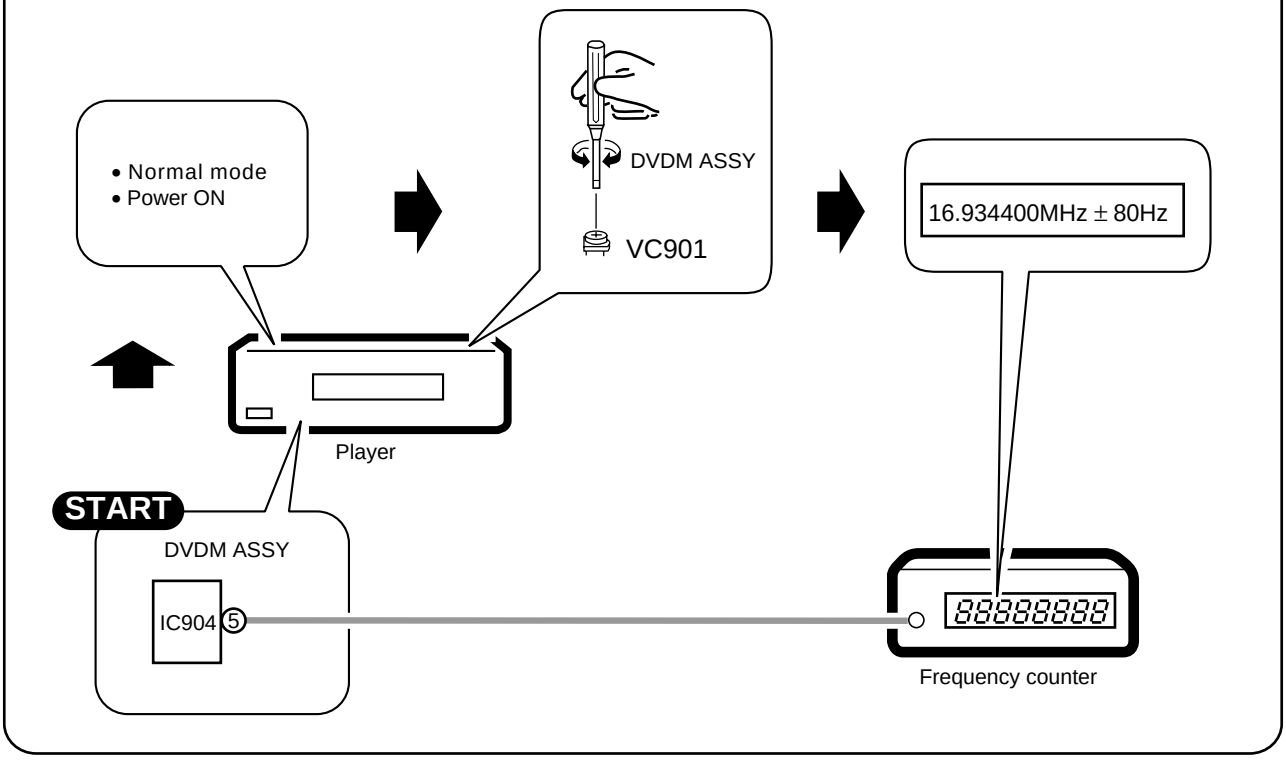
→ **Mechanical point** _____

→ **Electric point** _____

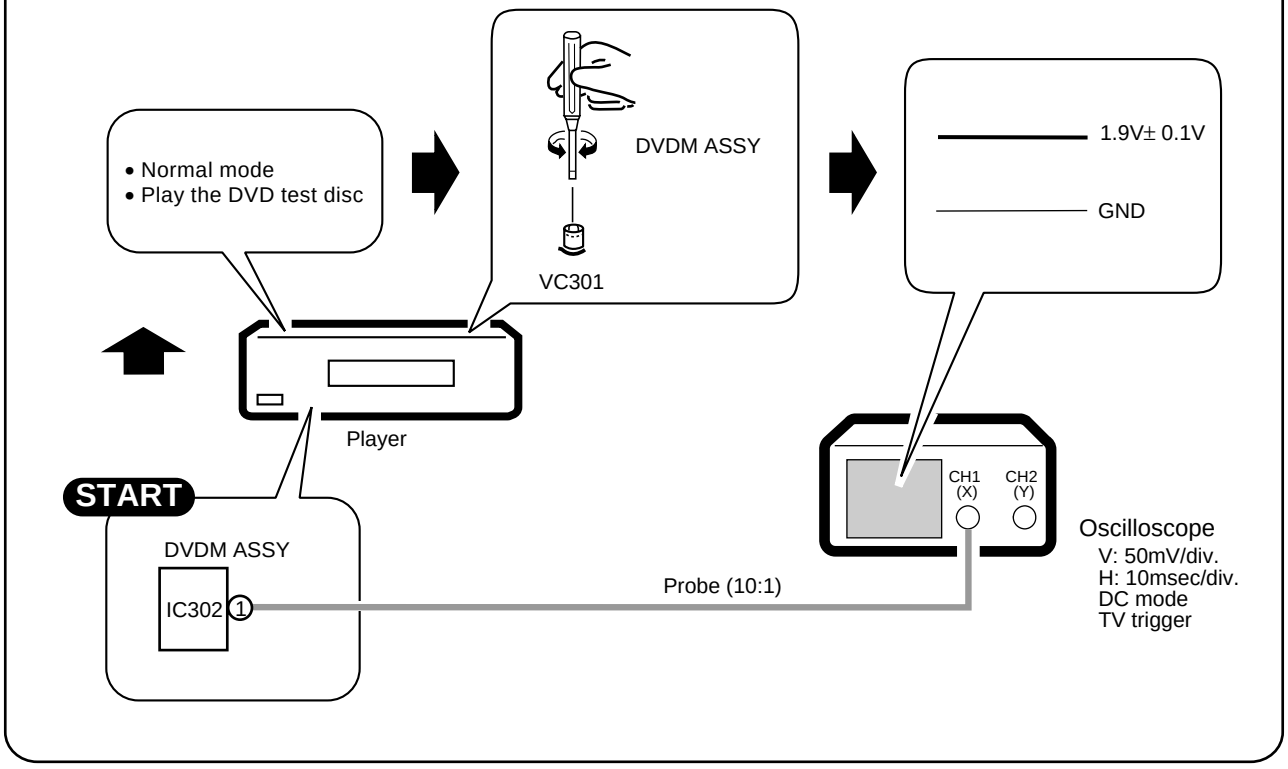
Note : ③ , ④ , ⑤ and ⑥ are adjusted already.

6.4 ELECTRICAL ADJUSTMENT

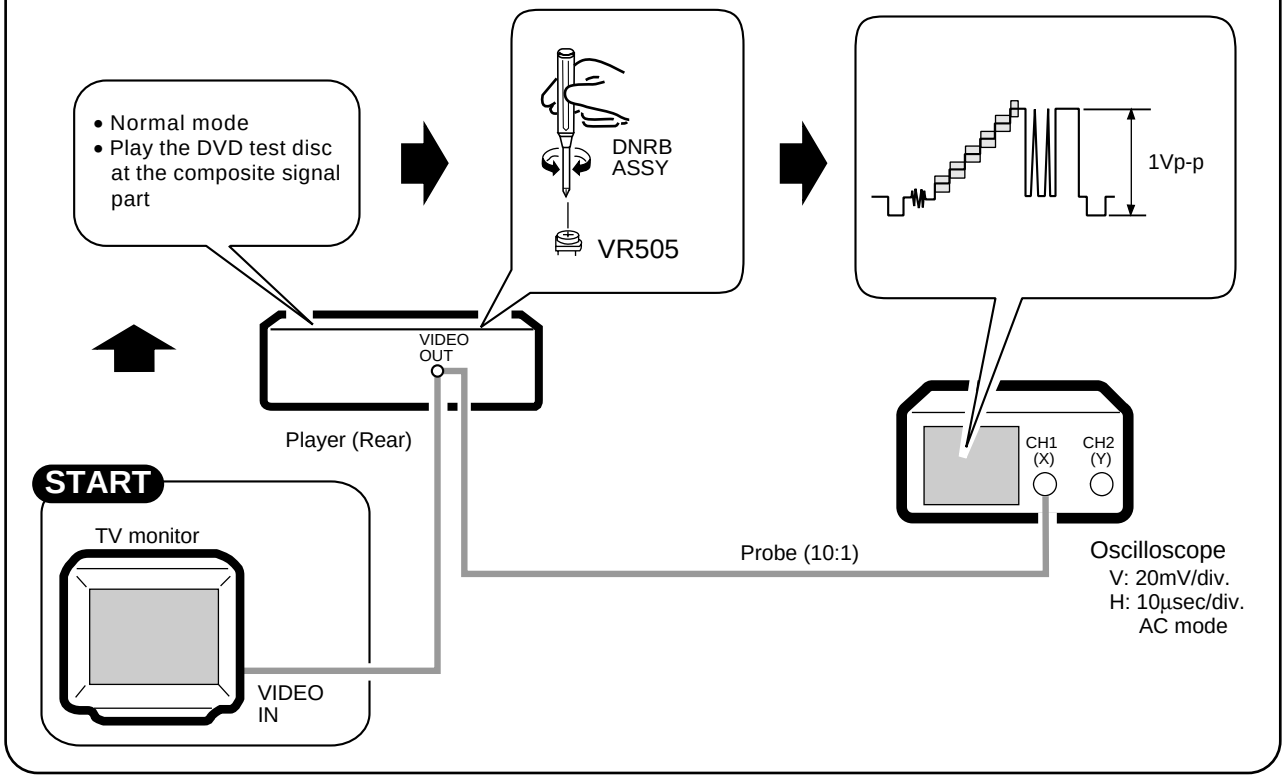
① 16MHz Master Clock Adjustment



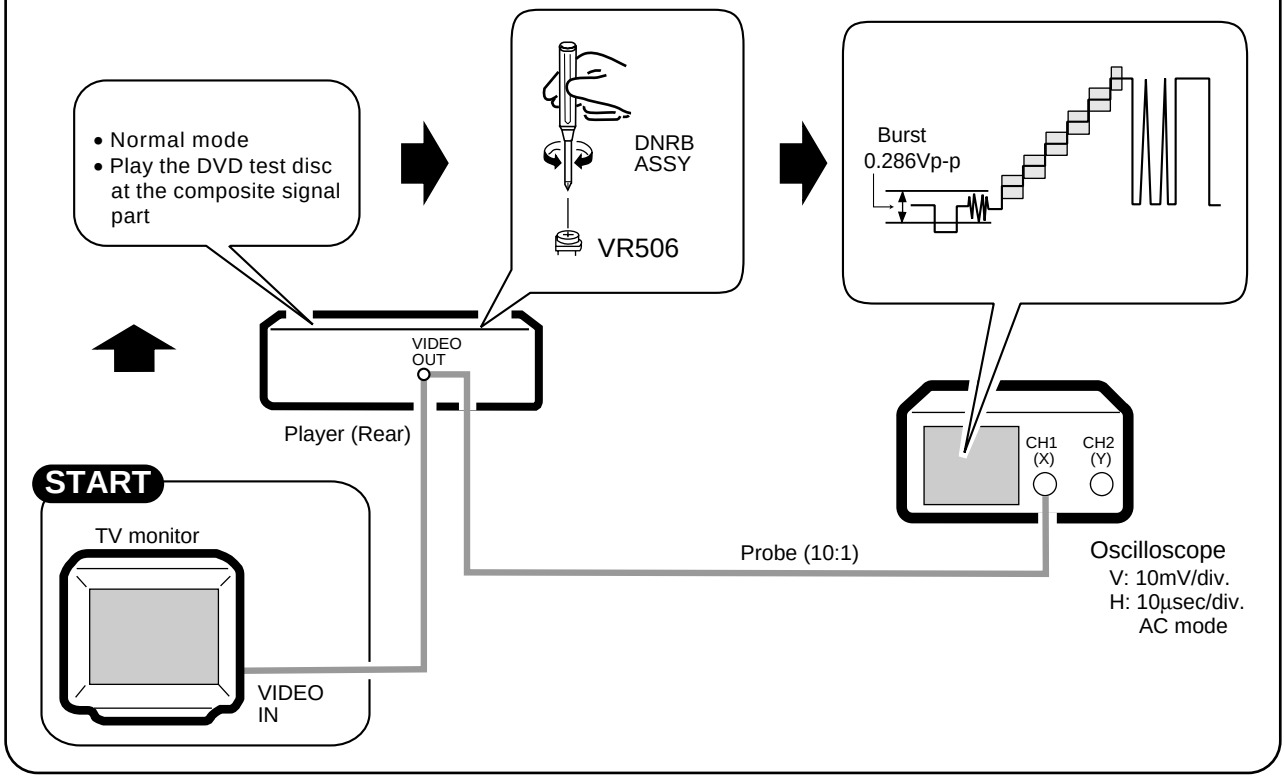
② VCO Offset Adjustment



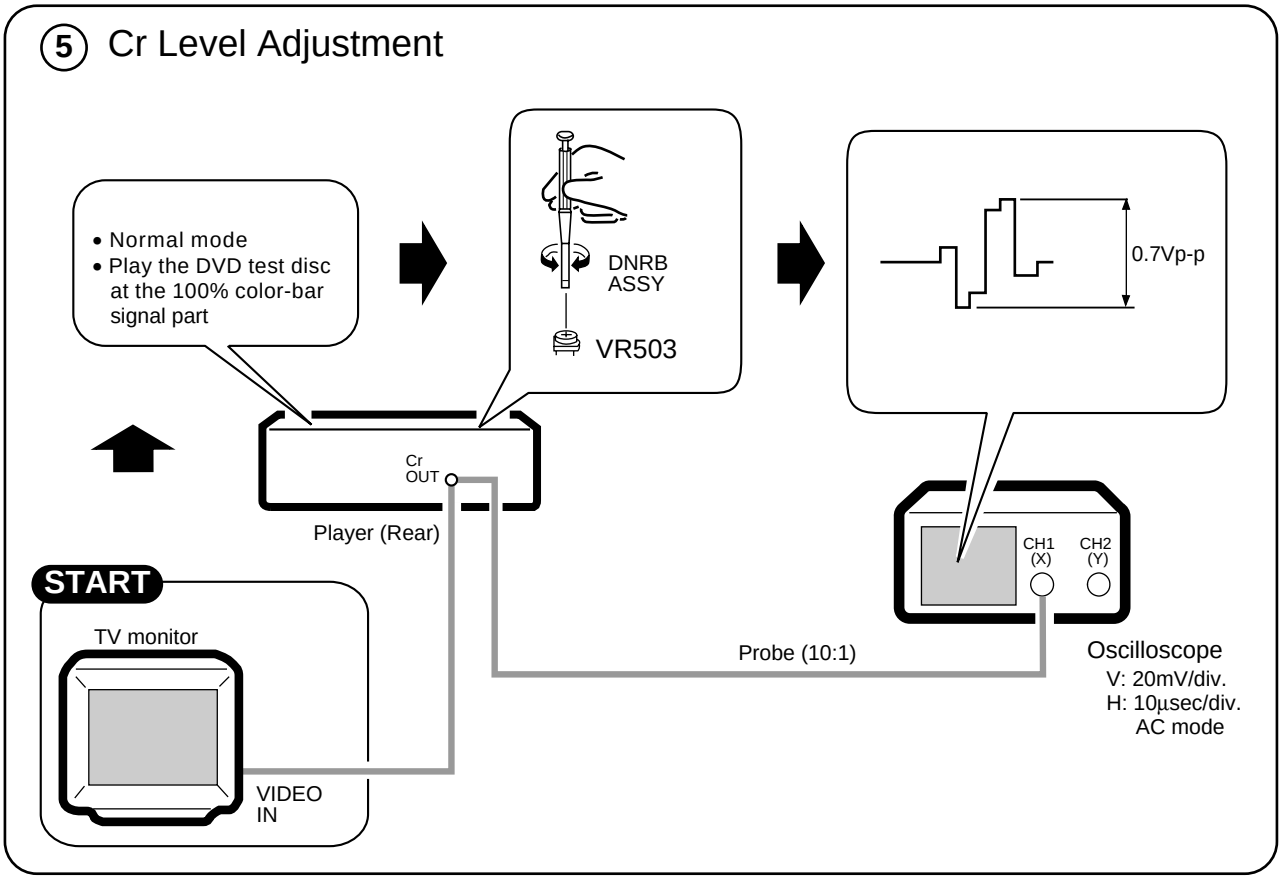
③ Y Level Adjustment



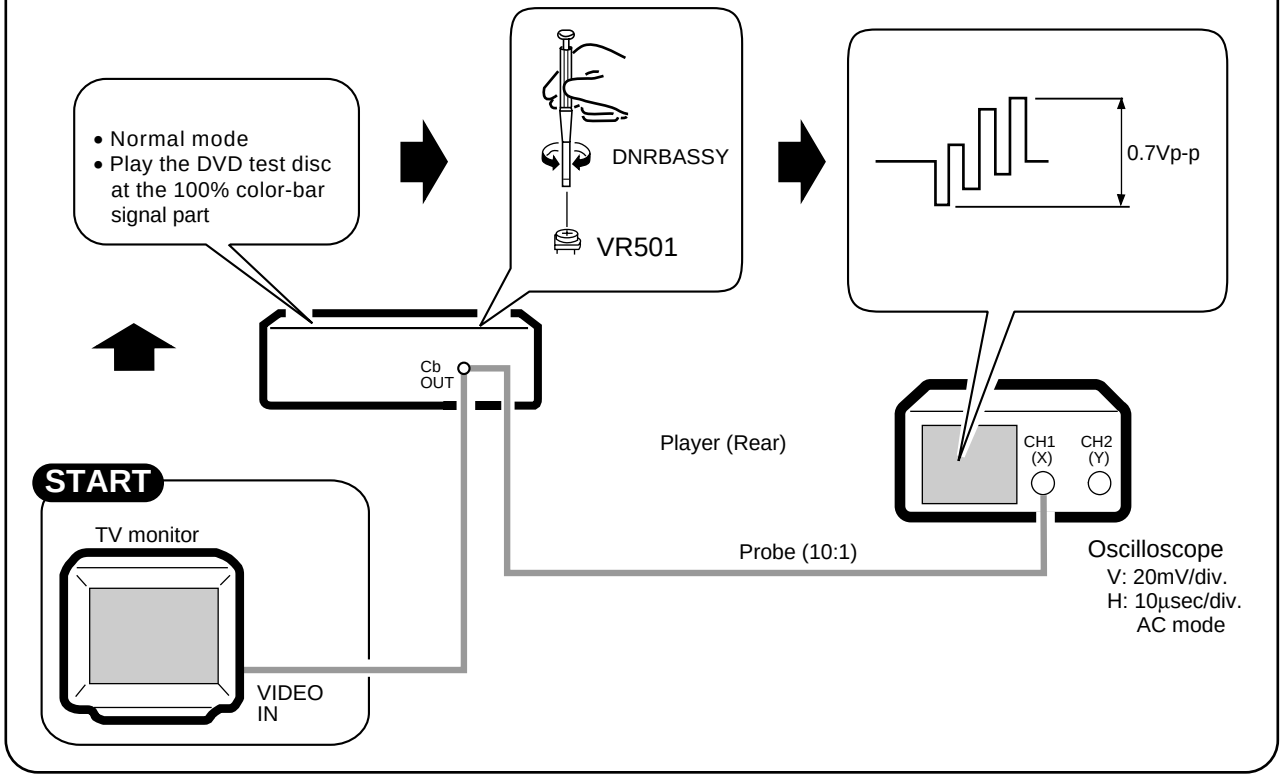
④ C Level Adjustment



5 Cr Level Adjustment



6 Cb Level Adjustment



7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

●List of IC

PE5018B, PE5012A, PD3381A, MN19425AA1, LA9701M, LC78651W, CXD1854Q, MC44724A

■PE5018B (FLKY ASSY : IC101)

• FL Control IC

● Pin Function

No.	Mark	Pin Name	I/O	Function	No.	Mark	Pin Name	I/O	Function
1	P94	G7	O	FL timing output H: ON	41	P32	P32	I	Not used
2	P93	G6			42	P31	P31	I	Not used
3	P92	G5			43	P30	(NC)	O	Non connection
4	P91	G4			44	P03	P03	I	Not used
5	P90	G3			45	P02	ON POWER	I	Switch the STBY/POWER ON at FL controller is rised u.p L: STBY
6	P81	G2			46	P01	LT	I	Communication handshake line with system controller H: Communication permission
7	P80	G1			47	P00	SEL IR	I	Remote control signal input
8	VDD	VCC	–	Power supply pin	48	IC	IC	–	–
9	P27	(NC)	O	Non connection	49	P72	(NC)	O	Non connection
10	P26	(NC)	O	Non connection	50	P71	FL OFF LED	O	FL OFF LED ON/OFF L: ON
11	P25	(NC)	O	Non connection	51	P70	V.D.S. LED	O	Virtual Dolby Surround LED ON/OF L:ON (DV-515 only)
12	P24	LAMP	O	DVD lamp ON/OFF H: ON	52	VDD	VDD	–	Power supply pin
13	P23	XREADY	O	Communication handshake line with system controller L: Communication permission	53	P127	(NC)	O	Non connection
14	P22	SCK	I/O	Communication clock output with system controller	54	P126	(NC)		
15	P21	SO	I/O	Communication data output with system controller	55	P125	(NC)		
16	P20	SI	I	Communication data input with system controller	56	P124	(NC)		
17	RESET	RESET IN	I	Reset input L: Reset	57	P123	(NC)		
18	P74	(NC)	O	Non connection	58	P122	(NC)		
19	P73	(NC)	O	Non connection	59	P121	(NC)		
20	AVSS	VSS	–	GND	60	P120	(NC)		
21	P17	POWER ON	O	SW 5V ON/OFF H: ON	61	P117	P15	O	FL segment output H: ON
22	P16	RESET OUT	O	System reset input L: Reset	62	P116	P14		
23	P15	(NC)	O	Non connection	63	P115	P13		
24	P14	KIN2	I	Key input	64	P114	P12		
25	P13	KIN1			65	P113	P11		
26	P12	KIN0			66	P112	P10		
27	P11	MS1	I	Destination discrimination input	67	P111	P9		
28	P10	MS0			68	P110	P8		
29	AVDD	AVDD	–	Power supply pin	69	P107	P7		
30	AVREF	AVREF	–	Reference power supply pin	70	P106	P6		
31	P04	P04	I	Not used	71	VLOAD	– 27V	–	Input for – 27V
32	XT2	(NC)	–	Non connection	72	P105	P5	O	FL segment output H: ON
33	VSS	VSS	–	GND	73	P104	P4		
34	X1	X1	I	Connect a microprocessor clock	74	P103	P3		
35	X2	X2	–		75	P102	P2		
36	P37	(NC)	O	Non connection	76	P101	P1		
37	P36	(NC)	O	Non connection	77	P100	G11		
38	P35	(NC)	O	Non connection	78	P97	G10		
39	P34	P34	I	Not used	79	P96	G9		
40	P33	P33	I	Not used	80	P95	G8		

■ PE5012A (DVDM ASSY : IC501)

• Mechanism Control IC

● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	LODDRV	I/O	Loading motor drive output	33	XCSB	O	DSP parallel command setting output "L"
2	XDF INH	I/O	High impedance (input) at DEFECT ON "L" output at DEFECT OFF	34	ASTB	O	Address strobe of multiplexed address/data bus
3	FOFST3	O	Not used (H fixed)	35	XRESET	I	System reset input "L"
4	EFLG	I	Count data input of error rate Measureable by using timer 1 and 2.	36	SBSY	INT	Subcode frame sync. input (H: S0+S1 period)
5	FSX	I		37	THLD	INT	T HOLD
6	ATBO	I/O	Tracking offset adjustment	38	XABUSY	INT	DSP auto sequence busy input "L"
7	V PB	I	EFM servo lock signal H/L = rough servo / phase servo	39	XMIRQ2	INT	LSI-11 interrupt input "L"
8	FOFST1	I/O	Focus offset adjustment 1	40	VDD	–	Power supply pin
9	VSS	–	GND	41	X2	–	Connect a crystal for main system clock oscillation
10	MAD0	I/O	External address data bus	42	X1	I	
11	MAD1			43	VPP	–	Internal connection Connect to Vss.
12	MAD2			44	PXT2	–	Connect a crystal for sub system clock oscillation
13	MAD3			45	XCURDET	I	Acutuator over-current detection input "L": Servo OFF for 300 ms.
14	MAD4			46	AVSS	–	Ground for A/D converter
15	MAD5			47	LODPOS	I	Loading clamp position SW input
16	MAD6			48	SLDPOS	I	Slider position SW input
17	MAD7			49	DOORSW	I	Not used
18	MA8	O	External address bus	50	FOFST4	I/O	Not used (H fixed)
19	MA9			51	XDSPRST	O	Not used
20	MA10			52	MON	O	Spindle motor ON output "L"
21	MA11			53	FOFST2	I/O	Focus offset adjustment 2
22	MA12			54	OEICG	O	"H": OEIC gain up to 6dB
23	MA13			55	AVDD	–	Analog power supply for A/D converter
24	VSS	–	GND	56	AVREF	I	Reference voltage input for A/D converter
25	MA14	O	External address bus	57	LD1ON	O	650nm laser diode ON signal
26	MA15			58	LD2ON	O	780nm laser diode ON signal
27	(P60)	O	Not used	59	AGOFF	O	"H": AGC of RFIC turns to OFF
28	DRXLD	O	Not used	60	DVD/XCD	O	H: DVD, L: CD
29	XCBUSY	I	DSP command reception is possible "L"	61	DPDXTE	O	Tracking error switch (H: 1 beam, L: 3 beams)
30	WRQ	I	Readable flag of subcode Q	62	TOFSTA	I/O	Tracking balance adjustment A
31	XMRD	O	CPU read pulse "L"	63	XCD2X	O	Not used
32	XMWR	O	CPU write pulse "L"	64	TOFSTC	I/O	Tracking balance adjustment C

■ PD3381A (DVDM ASSY : IC601)

• **System Control IC**

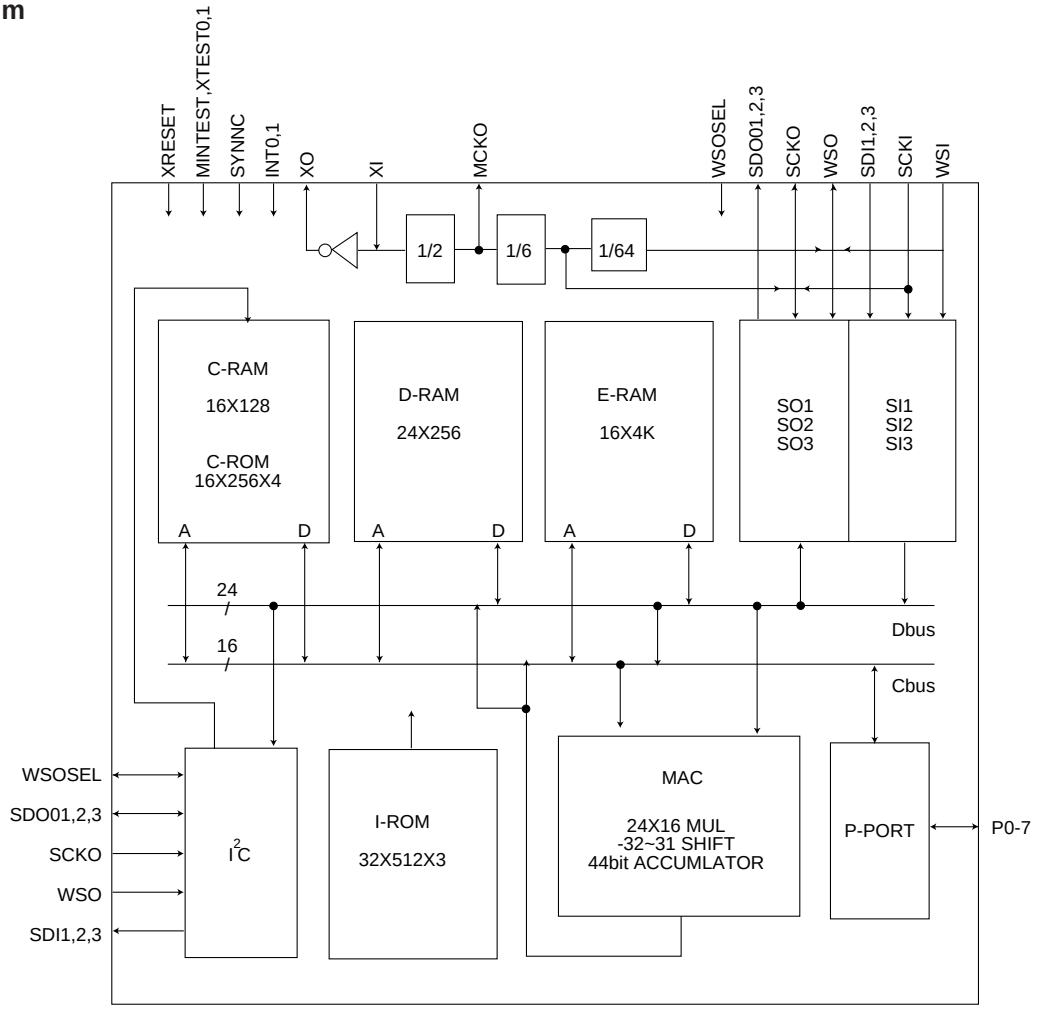
● **Pin Function**

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	PB14/XIRQ6	I	LSI-11 interrupt #1	57	XWRL	O	Low Byte write pulse
2	PB15/XIRQ7	I	AV Chip interrupt #0	58	XWRH	O	High Byte write pulse
3	VSS	–	GND	59	XRD	O	Read pulse
4	AD0	I/O	Data bus	60	PA7	O	Serial data latch pulse
5	AD1			61	VSS	–	GND
6	AD2			62	PA8	I	Final-stage mute of audio output
7	AD3			63	PA9	I	Parallel expansion port enable (S9)
8	AD4			64	PA10/TIOCA1	I	AV Chip interrupt #1
9	AD5			65	PA11/TIOCB1	I	Communication response to FL controller
10	AD6			66	PA12/DACK0	O	
11	AD7			67	PA13/XDREQ0	I	
12	VSS	–	GND	68	PA14/XDACK1	O	
13	AD8	I/O	Data bud	69	PA15/XDREQ1	I	
14	AD9			70	VCC	–	V+5D
15	VCC	–	V+5D	71	CK	O	
16	AD10	I/O	Data bus	72	VSS	–	GND
17	AD11			73	EXTAL	–	20MHz ceramic resonator
18	AD12			74	XTAL	–	
19	AD13			75	VCC	–	V+5D
20	AD14			76	NMI	I	D+5V
21	AD15			77	VCC (Vpp)	–	V+5D
22	VSS	–	GND	78	WDTOVF	O	
23	A0	O	Address bus	79	XRES	I	
24	A1			80	MD0	I	MD1, MD0 = 01 external ROM
25	A2			81	MD1	I	MD1, MD0 = 10 internal ROM
26	A3			82	MD2	I	GND
27	A4			83	VCC	–	V+5D
28	A5			84	VCC	–	V+5D
29	A6			85	AVCC	–	V+5D
30	A7			86	AVref	–	V+5D
31	VSS	–	GND	87	PC0/AN0	I	Rear panel switch H/M/L = NTSC/Auto/PAL
32	A8	O	Address bus	88	PC1/AN1	I	Authoring emulator mode setting
33	A9			89	PC2/AN2	I	(YAKU) special mode setting
34	A10			90	PC3/AN3	I	Reception error (unlock signal) input of DIR (S9)
35	A11			91	AVSS	–	GND
36	A12			92	PC4/AN4	I	Not used
37	A13			93	PC5/AN5	I	Test mode entry
38	A14			94	PC6/AN6	I	CDG data input
39	A15			95	PC7/AN7	I	RS232 transmitable input
40	VSS	–	GND	96	VSS	–	GND
41	A16	O	Address bus	97	PB0/TIOCA2	I	RS232 transmitable output
42	A17			98	PB1/TIOCB2	I	DAC fs 48/44 selection
43	VCC	–	V+5D	99	VCC	–	V+5D
44	A18	O	Address bus	100	PB2/TIOCA3	I	HiBit function ON
45	A19			101	PB3/TIOCB3	I	AV Chip interrupt #2
46	A20			102	PB4/TIOCA4	I	Communication request from FL controller
47	A21			103	PB5/TIOCB4	I	Block sync. input of external digital input (S9)
48	XCS0	O	(N.C. during ROM mode)	104	PB6/TCLKC	I	C2 error correction impossible pulse
49	XCS1	O	External address decoder enable	105	PB7/TCLKD	I	Dolby virtual chip reset & pulse (DV-515 only)
50	XCS2	O		106	VSS	–	GND
51	XCS3	O	LSI-11 chip select	107	PB8/SI0	I	Serial bus data input
52	VSS	–	GND	108	PB9/SO0	O	Serial bus data output
53	PA0/XCS4	O	Dolby virtual chip enable (DV-515 only)	109	PB10/SI1	I	RS-232C RxD
54	PA1/XCS5	O	Dolby virtual chip command/data control (DV-515 only)	110	PB11/SO1	I	RS-232C TxD
55	PA2/XCS6	O	AV Chip chip select	111	PB12/SCK0	I/O	Serial bus clock input and output
56	XWAIT	I	External wait input	112	PB13/XIRQ5	I	LSI-11 interrupt #0

MN19425AA1 (AVJB ASSY : IC201)

- **Audio signal processor**

- **Block diagrum**



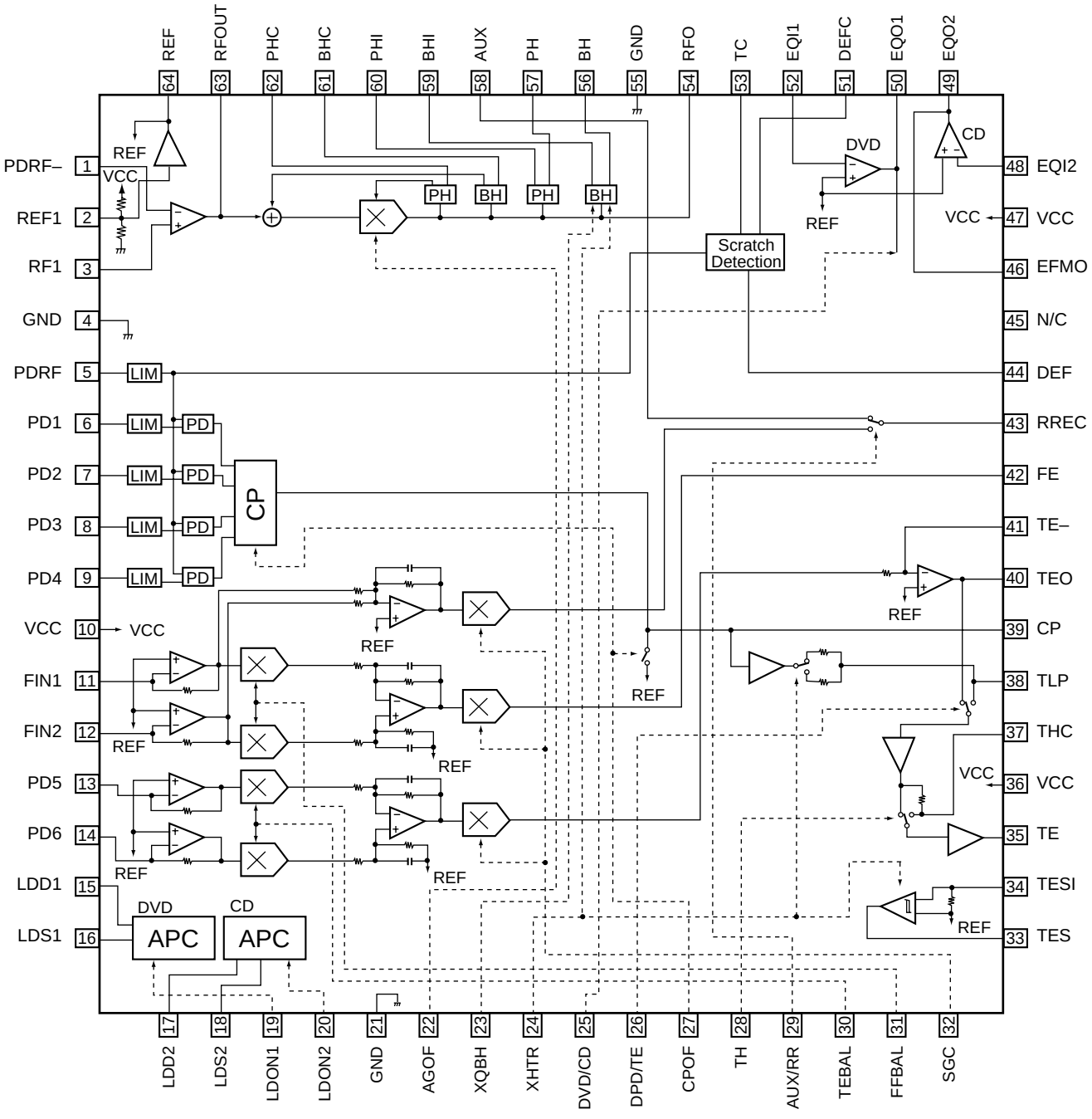
- **Pin Function**

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	SDI2	I	Data for serial input 2	23	XCSB	O	DSP parallel command setting output "L"
2	SDI1	I	Data for serial input 1	24	INT1	I	Interrupt input 1
3	SCKI	I	Serial clock for serial input	25	INT0	I	Interrupt input 0
4	SCKO	O	Serial clock for serial output	26	VDD	–	Power supply pin (3.3V)
5	VDD	–	Power supply pin (3.3V)	27	SCL	I/O	Serial clock for I ^{2}C
6	WSI	I	Word select for serial input	28	SDA	I/O	Serial data for I ^{2}C
7	SYNC	I	Input for program synclonization	29	VSS	–	GND
8	WSO	O	Word select for serial output	30	ADDR1	I	Address select 1 for I ^{2}C
9	VSS	–	GND	31	ADDR0	I	Address select 0 for I ^{2}C
10	SDO3	O	Data for serial output 3	32	XCE	I	Chip enable for I ^{2}C
11	SDO2	O	Data for serial output 2	33	MATCH	O	Address Match for I ^{2}C
12	SDO1	O	Data for serial output 1	34	XRESET	I	System reset input
13	P7	I/O/T	Port 7	35	XTEST1	I	Test input (3.3V)
14	P6	I/O/T	Port 6	36	XTEST0	I	Test input (3.3V)
15	VDD	–	Power supply pin (3.3V)	37	VDD	–	Power supply pin (3.3V)
16	P5	I/O/T	Port 5	38	XI	I	System clock input
17	P4	I/O/T	Port 4	39	XO	O	System clock output
18	VSS	–	GND	40	VSS	–	GND
19	P3	I/O/T	Port 3	41	MCKO	O	384fs clock
20	P2	I/O/T	Port 2	42	VREF5	–	5V power supply pin for I/O pin protection
21	PI/PTI	I/O/T	Port 1 / flug 1	43	MINTEST	I	Test input (0V)
22	PO/PTO	I/O/T	Port 0 / flug 0	44	SDI3	I	Data for serial input 3

LA9701M (DVDM ASSY : IC101)

- **RF IC**

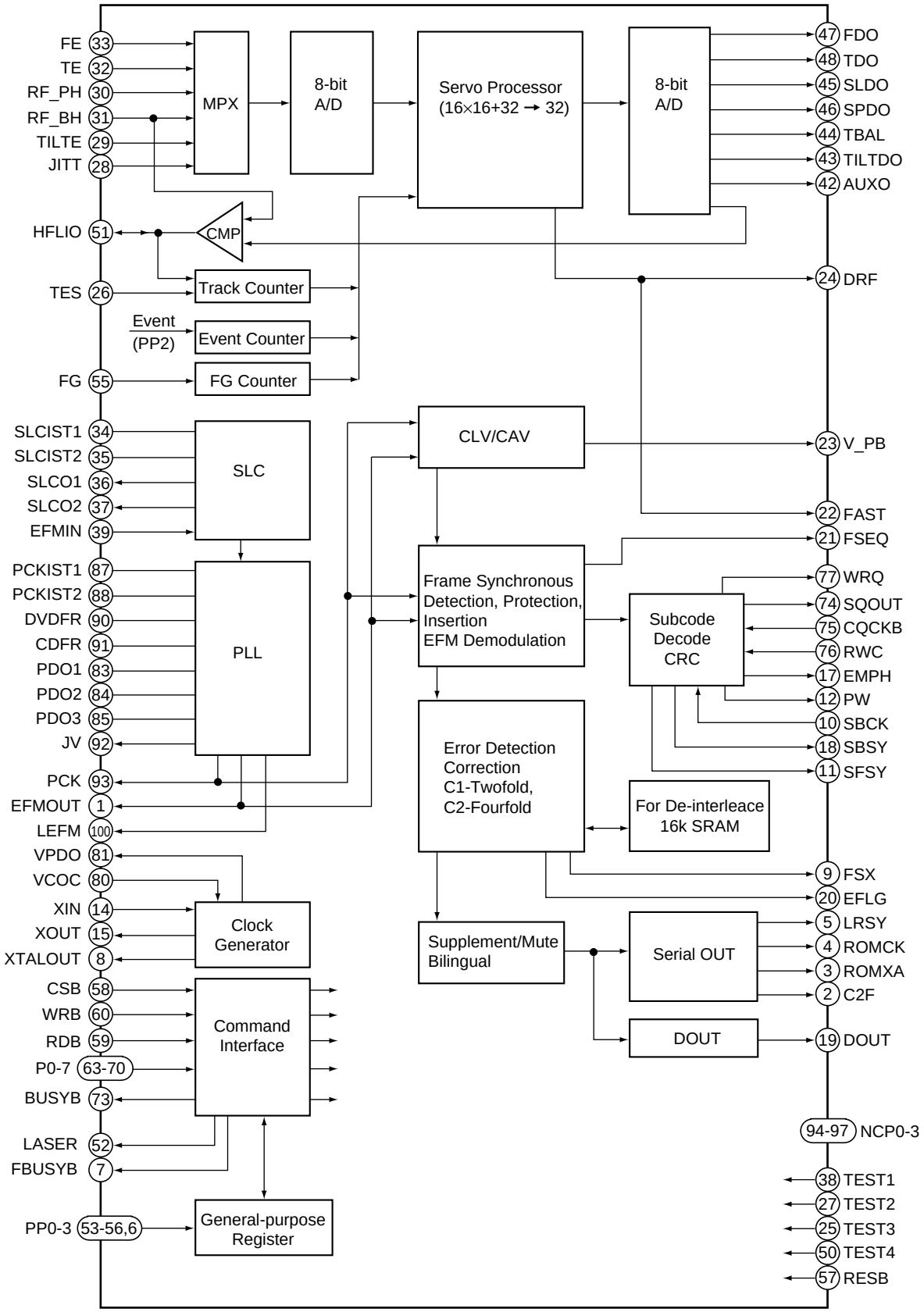
●Block Diagram



■ LC78651W (DVDM ASSY : IC201)

• **DSP IC**

●Block Diagram



● Pin Function

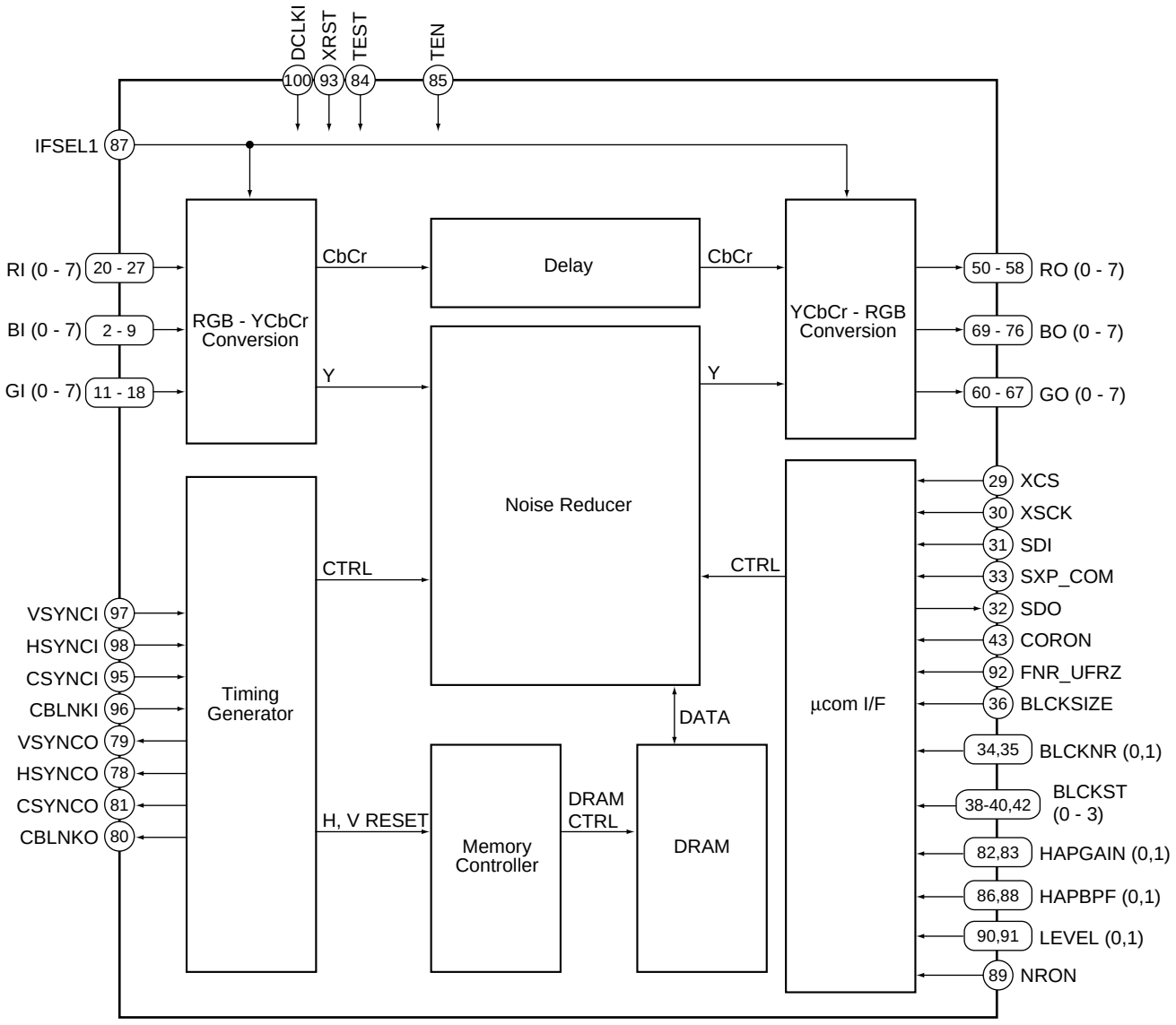
No.	Pin Name	I/O	Function
1	EFMOUT	O	Output the state that was binary-stated value EFM
2	C2F	O	C2 flag output
3	ROMXA	O	CD-ROM data output
4	ROMCK	O	Shift clock output for CD-ROM data output
5	LRSY	O	L/R clock output for CD-ROM data output
6	PP3/SYNC	I/O	General-purpose port input/output / DVD sync. signal input
7	FBUSYB	O	Busy signal output of DSP process operation
8	XTALOUT	O	External system clock output
9	FSX	O	CD 1 frame sync. signal output
10	SBCK	I	Subcode reading out clock input
11	SFSY	O	Frame sync. signal output of subcode
12	PW	O	Subcode P, Q, R, S, T, U, V and W output
13	VSS	–	GND for oscillation circuit
14	XIN	I	Connect a crystal resonator (16.9344MHz)
15	XOUT	O	Connect a crystal resonator
16	DVDD1	–	3.3V power supply of the oscillation circuit
17	EMPH	O	Monitor the deemphasis
18	SBSY	O	Sync. signal output of the subcode block
19	DOUT	O	Audio EIAJ data output
20	EFLG	O	Error correction state monitor of the error correction C1 and C2
21	FSEQ	O	Detection monitor of the CD/DVD frame sync. signal
22	FAST	O	Playback speed monitor
23	V_PB	O	Monitor output of the rough servo/CLV control
24	DRF	O	In focus monitor
25	TEST3	I	Test input 3
26	TES	I	Tracking error signal input
27	TEST2	I	Test input 2
28	JITT	I	Jitter quantity detecting signal input of EFM PLL
29	TILTE	I	Tilt error signal input
30	RF_PH	I	RF peak hold signal input
31	RF_BH	I	RF bottom hold signal input
32	TE	I	Tracking error signal input
33	FE	I	Focus error signal input
34	SLCIST1	–	Current setting pin 1 of the constant current charge pump for SLC
35	SLCIST2	–	Current setting pin 2 of the constant current charge pump for SLC
36	SLCO1	–	Control output 1 for SLC
37	SLCO2	–	Control output 2 for SLC
38	TEST1	I	Test input 1
39	EFMIN	I	EFM/EFM + input
40	AVDD	–	5V power supply of A/D and D/A for servo
41	AVSS	–	GND of A/D and D/A for servo
42	AUXO	O	DA auxiliary output
43	TILTDO	O	Tilt control signal output
44	TBAL	O	Tracking balance control signal output
45	SLDO	O	Sled control signal output
46	SPDO	O	Spindle control signal output
47	FDO	O	Focus control signal output
48	TDO	O	Tracking control signal output
49	VREF	–	Reference level of D/A for servo
50	TEST4	I	Test input 4

No.	Pin Name	I/O	Pin Function
51	HFLIO	I/O	Mirror detection signal input/output
52	LASER	O	Output pin for laser ON/OFF control
53	PP0/DVD_CDB	I/O	General-purpose port input/output / Disc discrimination signal output
54	PP1/CRCERRB	I/O	General-purpose port input/output / Subcode CRC result signal output
55	FG	I	FG counter input
56	PP2/EVENT	I/O	General-purpose port input/output / Event counter input
57	RESB	I	Reset input
58	CSB	I	Chip select input
59	RDB	I	Internal state reading signal input
60	WRB	I	Command / data writing signal input
61	DVDD2	–	5V power supply
62	VSS	–	GND
63	P0	I/O	Command / data input/output
64	P1		
65	P2		
66	P3		
67	P4		
68	P5		
69	P6		
70	P7		
71	VSS	–	GND
72	DVDD1	–	3.3V power supply for internal
73	BUSYB	O	Busy signal output of command process
74	SQOUT	O	Serial output of subcode Q
75	CQCKB	I	Shift clock input for subcode Q data output
76	RWC	I	Update permission input of subcode Q
77	WRQ	O	Read out ready monitor of subcode Q
78	AVSS	–	PLL GND for internal system clock
79	VRPFR	–	VCO oscillation range setting of PLL for internal system clock
80	VCOC	–	Connect a PLL filter for internal system clock
81	VPDO		
82	AVDD	–	PLL 5V power supply for internal system clock
83	PDO1	–	PLL filter connection pin 1 for EFM playback
84	PDO2	–	PLL filter connection pin 2 for EFM playback
85	PDO3	–	PLL filter connection pin 3 for EFM playback
86	AVSS	–	PLL GND for EFM playback
87	PCKIST1	–	Current setting 1 of PLL constant current charge pump for EFM playback
88	PCKIST2	–	Current setting 2 of PLL constant current charge pump for EFM playback
89	AVDD	–	PLL 5V power supply for EFM playback
90	DVDFR	–	VCO oscillation range setting of PLL for EFM playback 1
91	CDFR	–	VCO oscillation range setting of PLL for EFM playback 2
92	JV	O	Jitter output of PLL clock for EFM playback
93	PCK	O	Bit clock output for EFM playback
94	NCP0	–	NC
95	NCP1		
96	NCP2		
97	NCP3		
98	DVDD2	–	5V power supply
99	VSS	–	GND
100	LEFM	O	Output the state that cut and out a signal which was binary-stated value EFM with PCK

■ CXD1854Q (DNRB ASSY : IC101)

• DNR IC

●Block Diagram



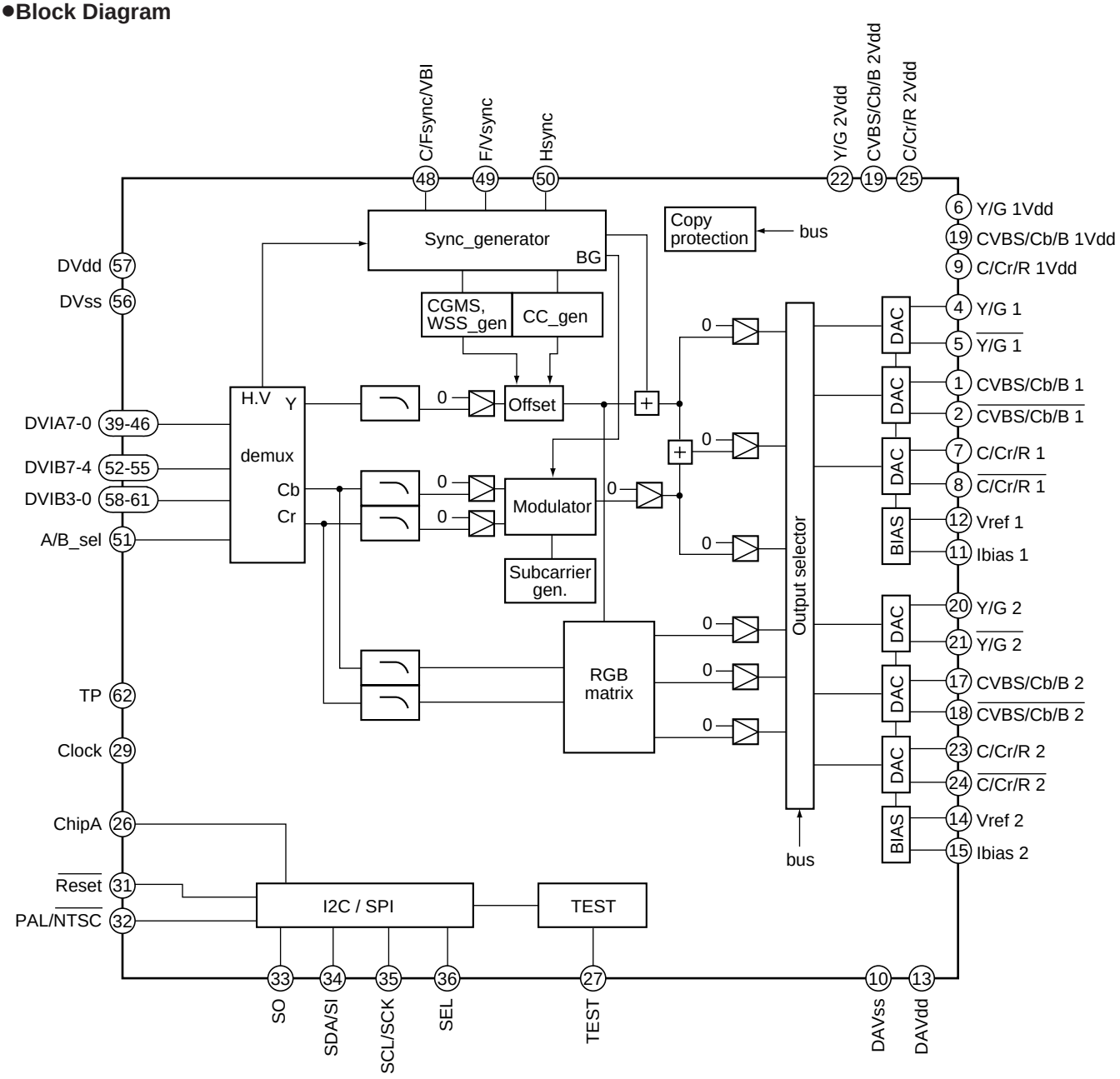
● Pin Function

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
1	VSS0	–	GND	51	RO0	O	[LSB]
2	BI7	I	[MSB]	52	RO1		
3	BI6			53	RO2		
4	BI5			54	RO3		
5	BI4		Connect to GND or B signal input	55	RO4		Cb/Cr (chroma) signal output or R signal output
6	BI3			56	RO5		
7	BI2			57	RO6		
8	BI1			58	RO7		[MSB]
9	BI0		Connect to GND or B signal input [LSB], or 27 MHz clock input	59	VDD2	–	GND
10	VSS1	–	GND	60	GO0	O	[LSB]
11	GI7	I	[MSB]	61	GO1		
12	GI6			62	GO2		
13	GI5			63	GO3		
14	GI4		Y (luminance) signal input or G signal input	64	GO4		Y (luminance) signal output or G signal output
15	GI3			65	GO5		
16	GI2			66	GO6		
17	GI1			67	GO7		[MSB]
18	GI0		[LSB]	68	VDD3	–	Power supply
19	VSS2	–	GND	69	BO0	O	[LSB]
20	RI7	I	[MSB]	70	BO1		
21	RI6			71	BO2		
22	RI5			72	BO3		
23	RI4			73	BO4		Open or B signal output
24	RI3		Cb/Cr (chroma) signal input or R signal input	74	BO5		
25	RI2			75	BO6		
26	RI1			76	BO7		[MSB]
27	RI0		[LSB]	77	VSS5	–	GND
28	VDD0	–	Power supply	78	HSYNCO	O	Horizontal sync. signal output
29	XCS	I	Chip select input for microcomputer interface	79	VSYNCO	O	Vertical sync. signal output
30	XSCK	I	Serial clock input for microcomputer interface	80	CBLNKO	O	Composite blanking signal output
31	SDI	I	Serial data input for microcomputer interface	81	CSYNCO	O	Composite sync. signal output
32	SDO	O	Output for test	82	HAPGAIN0	I	Effect level control input of outline emphasis
33	SXP_COM	I	Input for serial/parallel (H/L) switch of microcomputer communication	83	HAPGAIN1		
34	BLCKNR0	I	Input for effect level control of Block NR	84	TEST	I	Test pin (Pull Down)
35	BLCKNR1			85	TEN	I	Test pin (Pull Up)
36	BLCKSIZE	I	Input for block size switch of Block NR (L: 16 pixel, H: 8 pixel)	86	HAPBPF0	I	Input for correct bandpass control of outline effect
37	VDD1	–	Power supply	87	IFSEL1	I	Y/C and RGB input/output switching signal (L:Y/C, H: RGB)
38	BLCKST0	I	Input for block border position control of Block NR	88	HAPBPF1	I	Input for correct bandpass control of outline effect
39	BLCKST1			89	NRON	I	ON/OFF switching signal of field NR (L:OFF,H:ON)
40	BLCKST2			90	LEVEL0	I	Effect level switching signal of field NR (4-stage)
41	VSS3	–	GND	91	LEVEL1		
42	BLCKST3	I	Input for block border position control of Block NR	92	FNR_UFRZ	I	Input for stick improvement process switch of field NR (L: OFF, H: ON)
43	CORON	I	Input for core-ring control of outline emphasis (L: OFF, H: ON)	93	XRST	I	Reset pin (Pull Up)
44	ADVD	–	Power supply for DRAM (5V)	94	VSS6	–	GND
45	ADVS	–	GND for DRAM	95	CSYNCI	I	Composite sync. signal input
46	NC	–	NC	96	CBLNKI	I	Composite blanking signal input
47	NC			97	VSYNCI	I	Vertical sync. signal input
48	NC			98	HSYNCI	I	Horizontal sync. signal input
49	NC			99	VDD4	–	Power supply
50	VSS4	–	GND	100	DCLKI	I	DOT CLOCK input (13.5 MHz)

MC44724A (DNRB ASSY : IC102)

- **VIDEO ENCODER IC**

●Block Diagram



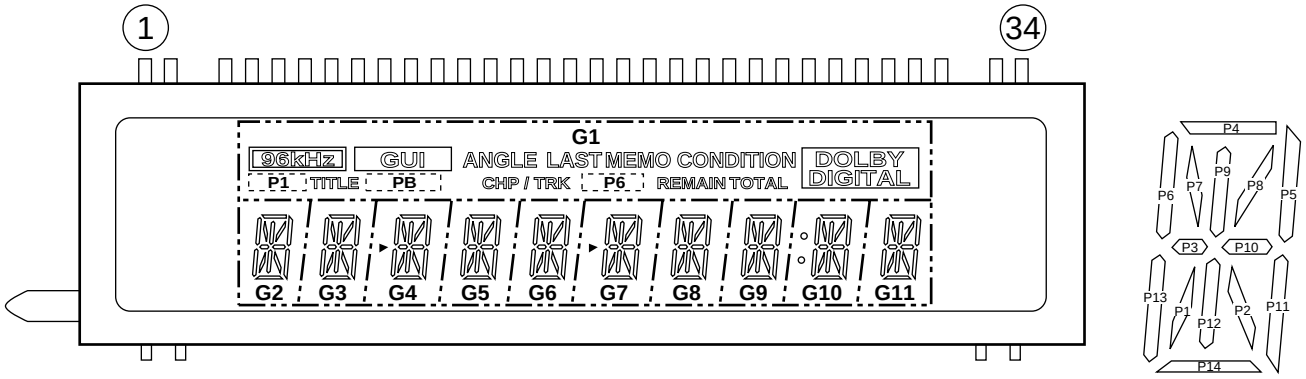
● Pin Function

No.	Pin Name	I/O	Function
1	CVBS/Cb/B1	O	Analog composite video signal output or Cb or B signal output current drive (positive)
2	$\overline{\text{CVBS/Cb/B1}}$	O	Analog composite video signal output or Cb or B signal output current drive (negative)
3	CVBS/Cb/B1 Vdd	–	Power supply for CVBS / Cb / B DAC1 circuit
4	Y/G1	O	Analog luminance or G signal output current drive (positive)
5	$\overline{\text{Y/G1}}$	O	Analog luminance or G signal output current drive (negative)
6	Y/G1 Vdd	–	Power supply for Y / G DAC1 circuit
7	C/Cr/R1	O	Analog chrominance signal output or Cr or R signal output current drive (positive)
8	$\overline{\text{C/Cr/R1}}$	O	Analog chrominance signal output or Cr or R signal output current drive (negative)
9	C/Cr/R1 Vdd	–	Power supply for C / Cr / R DAC1 circuit
10	DAVss	–	Ground for DAC circuit
11	Ibias 1	O	Reference current for the 1st set of 3 DACs
12	Vref 1	–	Reference full scale voltage for the 1st set of 3 DACs
13	DAVdd	–	Power supply for the DACs
14	Vref 2	–	Reference full scale voltage for the 2nd set of 3 DACs
15	Ibias 2	O	Reference current for the 2nd set of 3 DACs
16	NC	–	Non connection
17	CVBS/Cb/B2	O	Analog composite video signal output or Cb or B signal output current drive (positive)
18	$\overline{\text{CVBS/Cb/B2}}$	O	Analog composite video signal output or Cb or B signal output current drive (negative)
19	CVBS/Cb/B2 Vdd	–	Power supply for CVBS / Cb / B DAC2 circuit
20	Y/G2	O	Analog luminance or G signal output current drive (positive)
21	$\overline{\text{Y/G2}}$	O	Analog luminance or G signal output current drive (negative)
22	Y/G2 Vdd	–	Power supply for Y / G DAC2 circuit
23	C/Cr/R2	O	Analog chrominance signal output or Cr or R signal output current drive (positive)
24	$\overline{\text{C/Cr/R2}}$	O	Analog chrominance signal output or Cr or R signal output current drive (negative)
25	C/Cr/R2 Vdd	–	Power supply for C / Cr / R DAC2 circuit
26	ChipA	–	I2C chip address select (0:40 (hex) / 41 (hex) 1:1D (hex) / 1E (hex))
27	TEST	I	TEST pin (Grounded)
28	DVss	–	Ground for Digital circuit
29	CLOCK	I	27MHz clock input
30	DVdd	–	Power supply for Digital circuit
31	$\overline{\text{Reset}}$	I	Reset signal, active LOW
32	PAL/$\overline{\text{NTSC}}$	I	NTSC/PAL select This pin is sampled only at Reset.(NTSC: Low, PAL: High)
33	SO	O	In SPI mode, serial data output / In I2C mode, Grounded
34	SDA/SI	I/O	Serial data input Open drain output / If SPI mode, serial data input
35	SCL/SCK	I	Serial clock
36	SEL	I	Connect to Ground / If SPI mode, this pin is chip select.
37	DVdd	–	Power supply for Digital circuit
38	DVss	–	Ground for Digital circuit
39 to 46	DVIA7 to DVIA0	I/O	8-bit Multiplexed 4:2:2 data (ITU Rec656/601) input (DVIA), or Multiplexed Y data (ITU Rec656/601) input in 16-bit input mode
47	Vmute	I	Video mute on Reset (0: normal, 1: mute)
48	C/Fsync/VBI	I/O	Csync / Frame sync output, or external VBI information input
49	F/Vsync	I/O	Frame sync or Vertical sync input/output
50	Hsync	I/O	Horizontal sync input/output
51	A/B sel	I	Switch control for 8-bit X2 Multiplexed 4:2:2 data (ITU Rec656/601) input (DVIA) or (DVIB)
52 to 55	DVIB7 to DVIB4	I/O	8-bit Multiplexed 4:2:2 data (ITU Rec656/601) input (DVIB), or Multiplexed Cr/Cb data (ITU Rec656/601) input in 16-bit input mode
56	DVss	–	Ground for Digital circuit
57	DVdd	–	Power supply for Digital circuit
58 to 61	DVIB3 to DVIB0	I/O	Multiplexed 4:2:2 data (ITU Rec656/601) input (DVIB), or Multiplexed Cr/Cb data (ITU Rec656/601) input in 16-bit input mode
62	TP	I/O	Test data input/output (Grounded)
63 to 64	NC	–	Non connection (Grounded)

7.1.2 DISPLAY

■ VAW1046 (FLKB ASSY : V101)

• FL DISPLAY



• ANODE AND GRID ASSIGNMENT

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
P1	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1
P2	ANGLE	P2	P2	P2	P2	P2	P2	P2	P2	P2	P2
P3	TITLE	P3	P3	P3	P3	P3	P3	P3	P3	P3	P3
P4	LAST MEMO	P4	P4	P4	P4	P4	P4	P4	P4	P4	P4
P5	CONDITION	P5	P5	P5	P5	P5	P5	P5	P5	P5	P5
P6	P6	P6	P6	P6	P6	P6	P6	P6	P6	P6	P6
P7	CHP/TRK	P7	P7	P7	P7	P7	P7	P7	P7	P7	P7
P8	P8	P8	P8	P8	P8	P8	P8	P8	P8	P8	P8
P9	REMAIN	P9	P9	P9	P9	P9	P9	P9	P9	P9	P9
P10	DOLBY DIGITAL	P10	P10	P10	P10	P10	P10	P10	P10	P10	P10
P11	GUI	P11	P11	P11	P11	P11	P11	P11	P11	P11	P11
P12	96kHz	P12	P12	P12	P12	P12	P12	P12	P12	P12	P12
P13		P13	P13	P13	P13	P13	P13	P13	P13	P13	P13
P14		P14	P14	P14	P14	P14	P14	P14	P14	P14	P14
P15	TOTAL			▷			▷			° °	

• PIN ASSIGNMENT

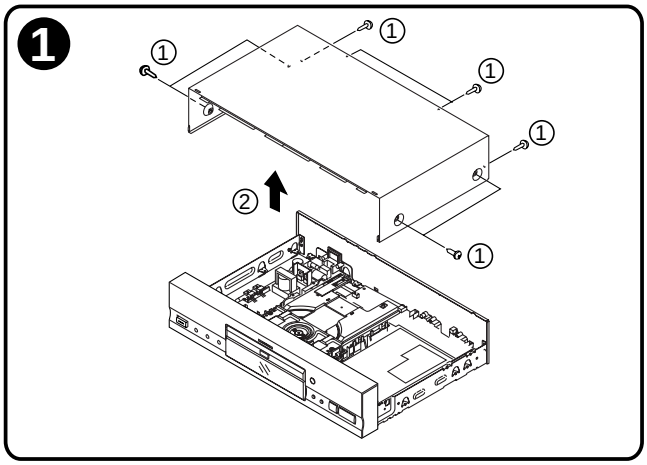
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Assignment	F1	F1	NP	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2

Pin No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Assignment	P1	G11	G10	G9	G8	NL	NL	G7	G6	G5	G4	G3	G2	G1	NP	F2	F2

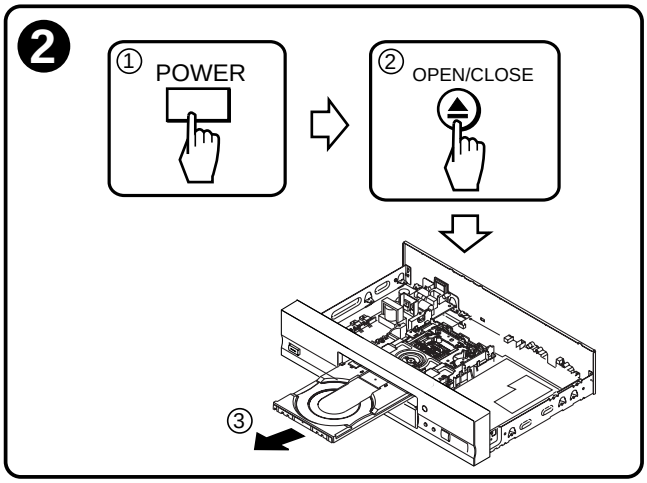
F1, F2 : Filament G1~G11 : Grid P1~P15 : Anode NP : No Pin NL : No Lead

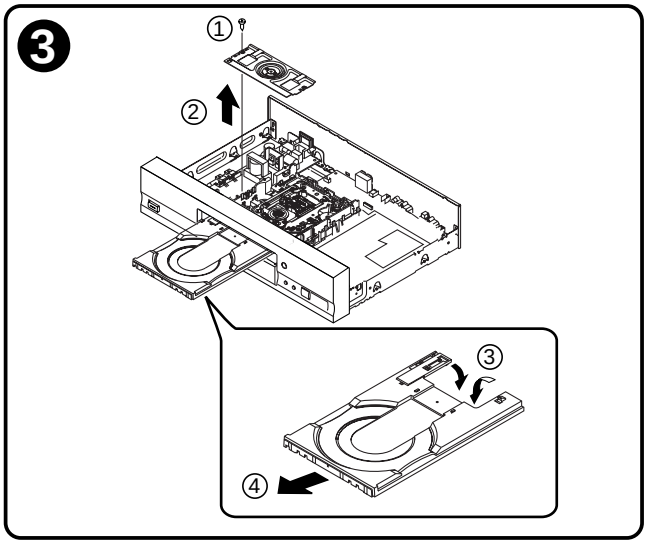
7.2 DISASSEMBLY

BONNET

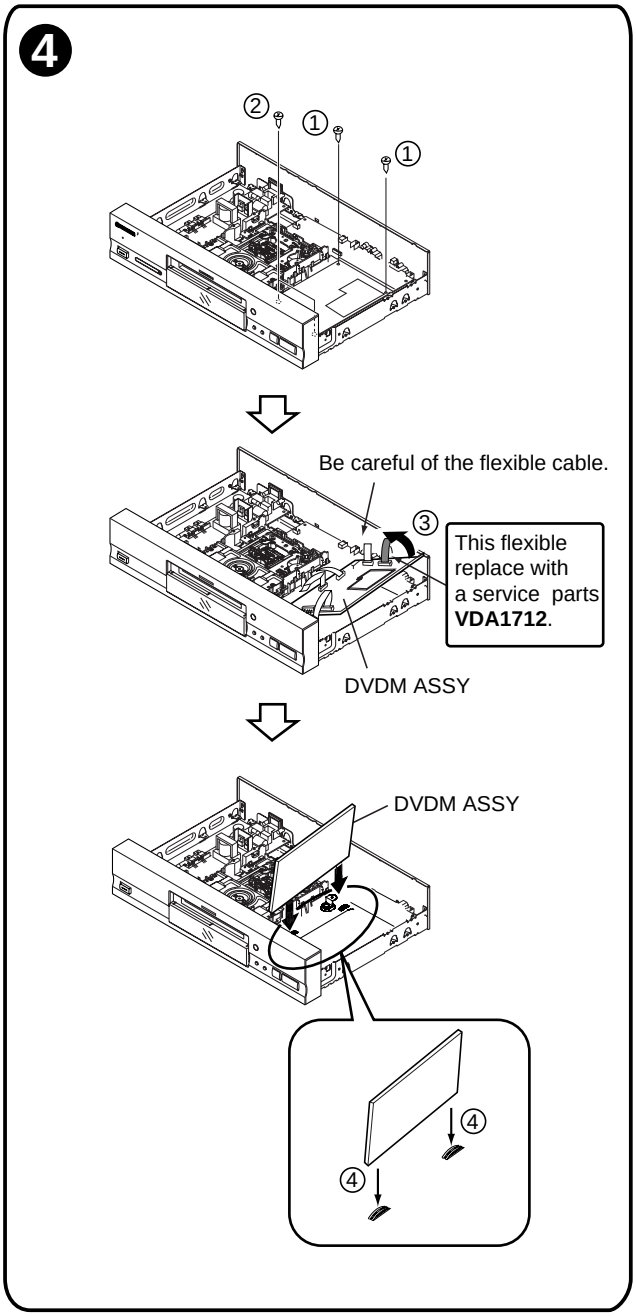


DISC TRAY

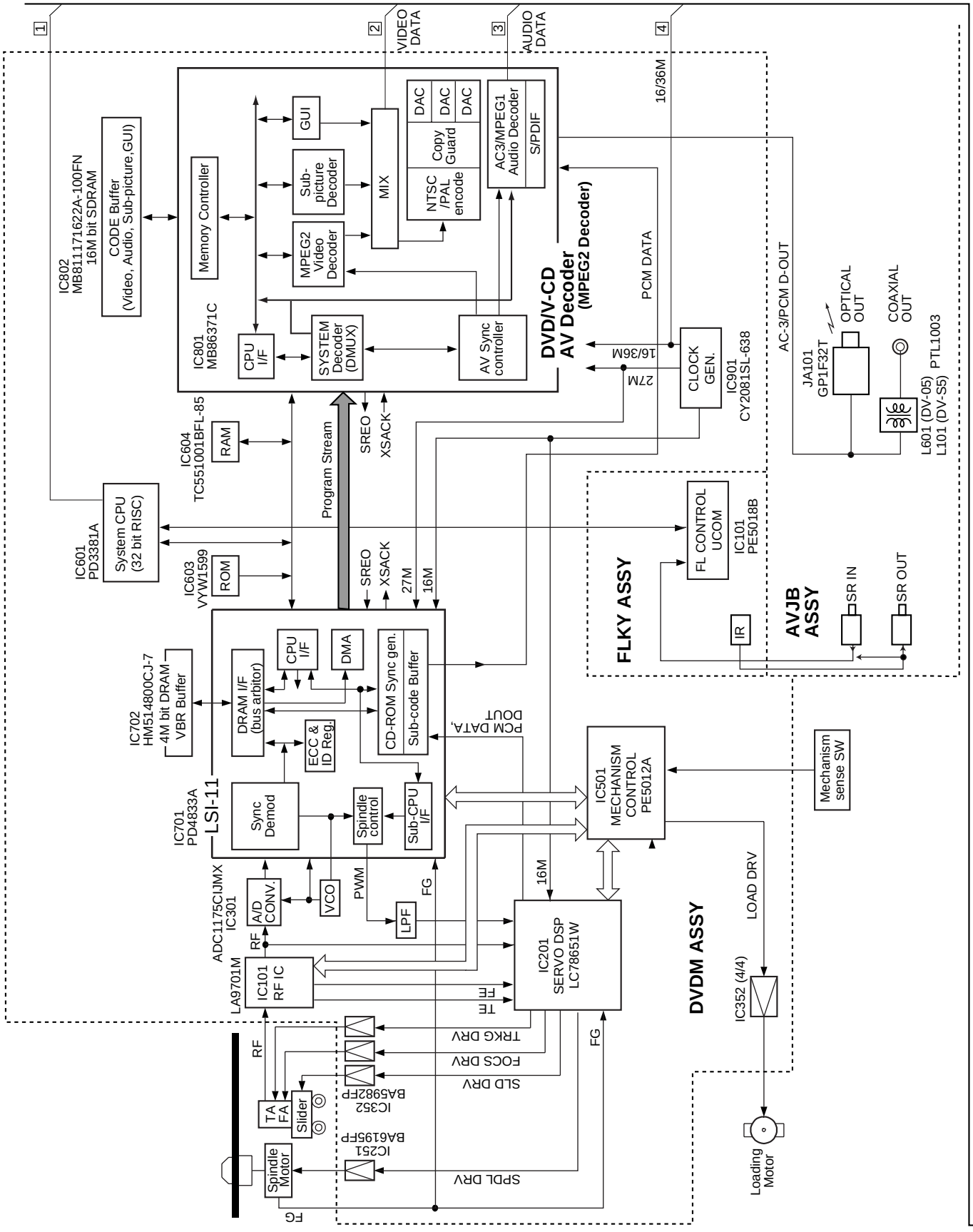


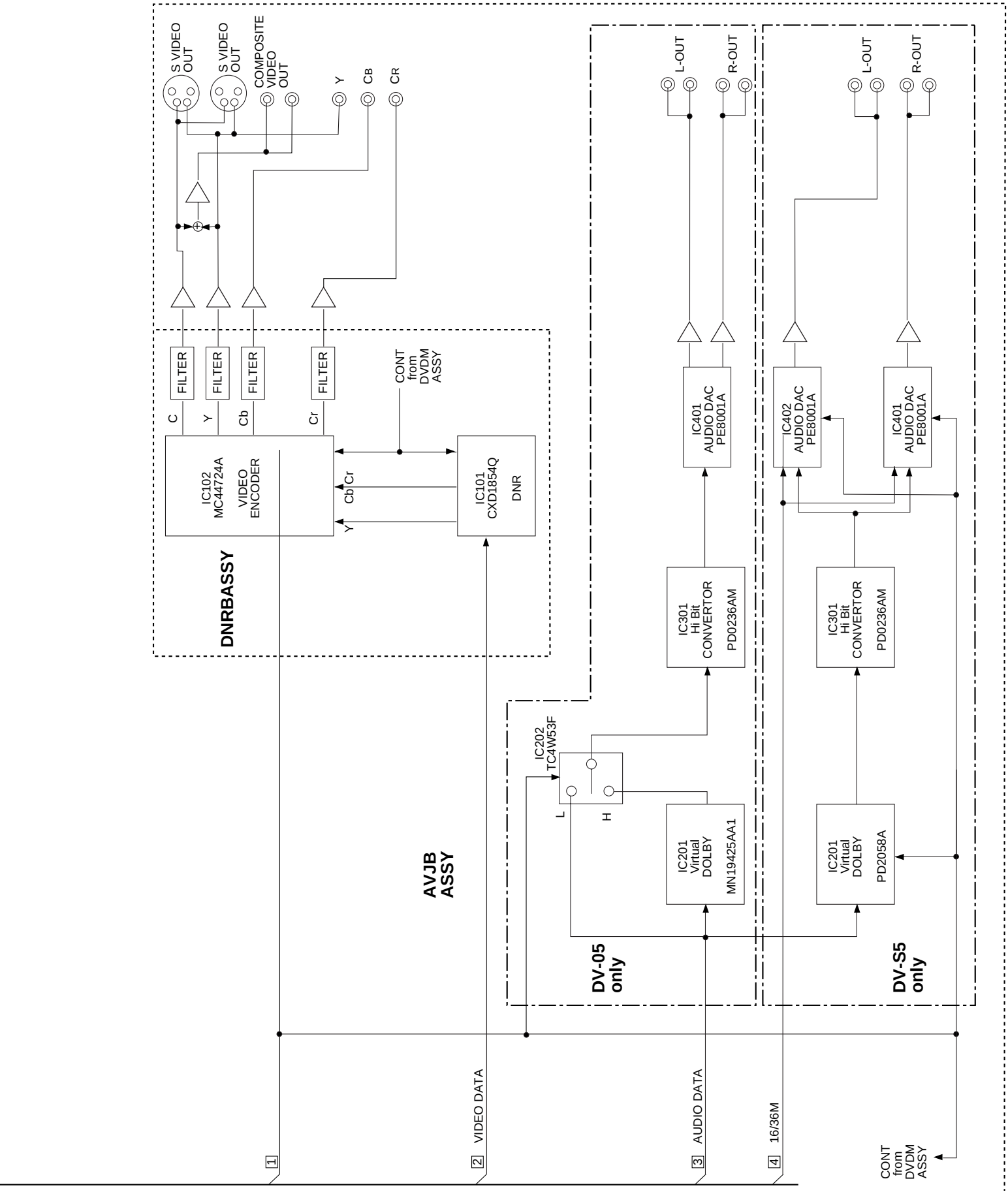


DVDM ASSY



7.3 BLOCK DIAGRAM




S VIDEO OUT
S VIDEO OUT
COMPOSITE VIDEO OUT
Y
CB
CR
FILTER
FILTER
FILTER
FILTER
C
Y
Cb
Cr
CONT from DVDM ASSY
IC102 MC44724A VIDEO ENCODER
IC101 CXD1854Q DNR
Cb/Cr
Y
DNRBASSY
AVJB ASSY
IC202 TC4W53F
L
H
IC301 Hi Bit CONVERTOR PD0236AM
IC201 Virtual DOLBY MN19425AA1
IC401 AUDIO DAC PE8001A
L-OUT
R-OUT
DV-05 only
IC301 Hi Bit CONVERTOR PD0236AM
IC201 Virtual DOLBY PD2058A
IC402 AUDIO DAC PE8001A
IC401 AUDIO DAC PE8001A
L-OUT
R-OUT
DV-S5 only
1
2 VIDEO DATA
3 AUDIO DATA
4 16/36M
CONT from DVDM ASSY

7.4 CIRCUIT DESCRIPTION

7.4.1 VIDEO SIGNAL PROCESSING BLOCK

■ CXD1854Q Block

The major processing functions of the CXD1854Q block are:

(1) Field-correlative cyclic digital noise reduction
(2) Block noise reduction
(3) Horizontal contour compression

These functions are performed for the Y signal and not performed for the C signal.

(1) Field Correlative Cyclic Digital Noise Reduction

For eight-bit digital video data input to the CXD1854Q, noise reduction is achieved through the subtraction of data of one field from the corresponding data one field before. This data is stored in a buffer zone where the subtraction process takes place and this buffer zone is a 512Kbit DRAM.
The noise signal detected as a result is sent to a non-linear circuit. If the difference is larger than a specific value, it is regarded as “a change in picture,” and no canceling calculation is made.

(2) Block Noise Reduction

The Horizontal Block Noise components in the field which are generated through DCT for the MPEG encoding are rejected.
They are detected through comparing input data between blocks.
The noise signal detected as a result is sent to a non-linear circuit. If the difference is larger than a specific value, it is regarded as “a change in picture,” and no canceling calculation is made.

(3) Horizontal Contour Compensations

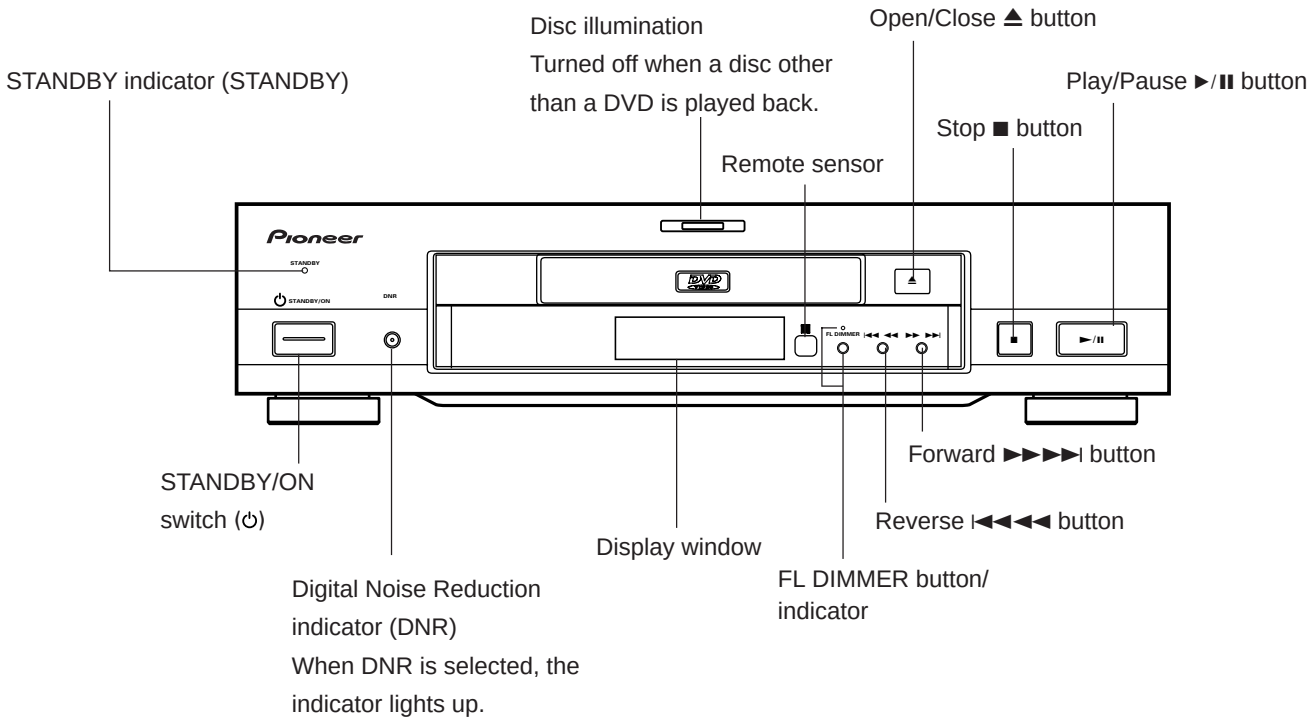
This is performed by emphasizing components in the region of 2.3MHz.

■ MC44724A Block

The digital video encoder MC44724A changes the digital component signals to analog video signals (Y signal, C signal, Cr signal and Cb signal).
It is added the digital video encoder for the digital processing of CXD1854Q.

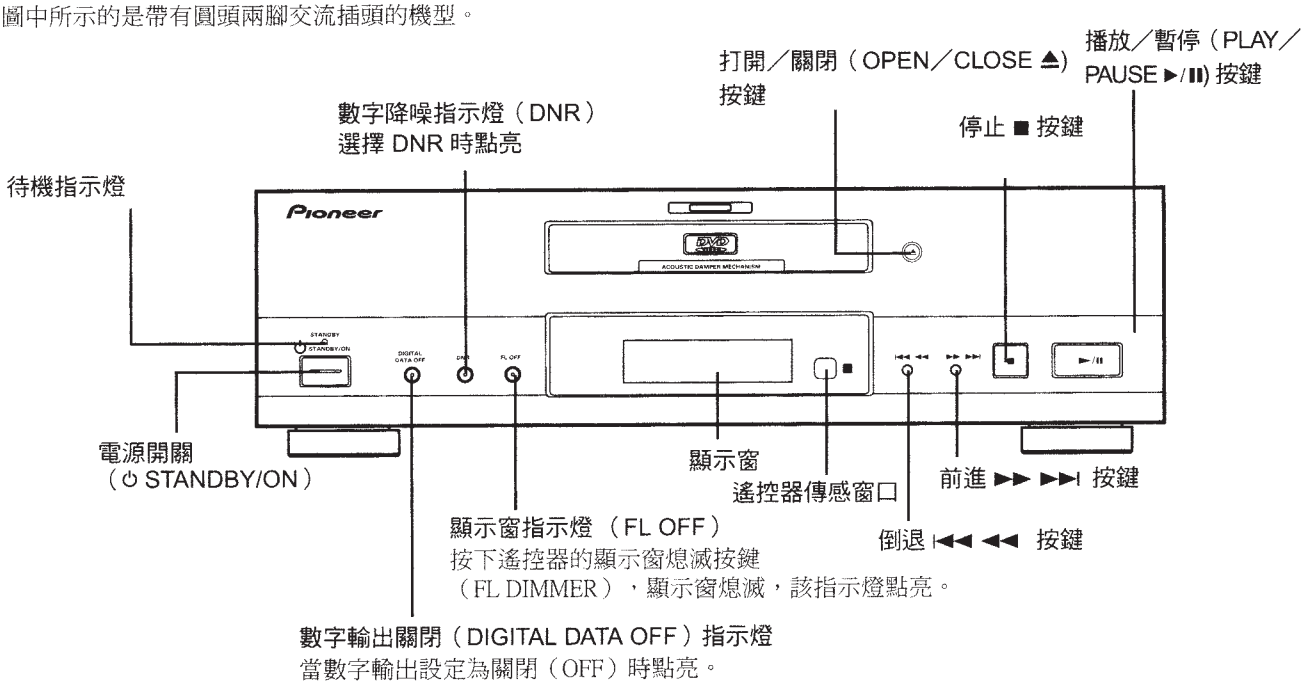
8. PANEL FACILITIES AND SPECIFICATIONS

■ Front panel for DV-05


STANDBY indicator (STANDBY)
Disc illumination
Turned off when a disc other than a DVD is played back.
Open/Close ⏏ button
Play/Pause ►/II button
Stop ■ button
Remote sensor
Forward ►►►►I button
STANDBY/ON switch (⏻)
Reverse I◄◄◄◄ button
Display window
FL DIMMER button/ indicator
Digital Noise Reduction indicator (DNR)
When DNR is selected, the indicator lights up.

■ Front panel for DV-S5

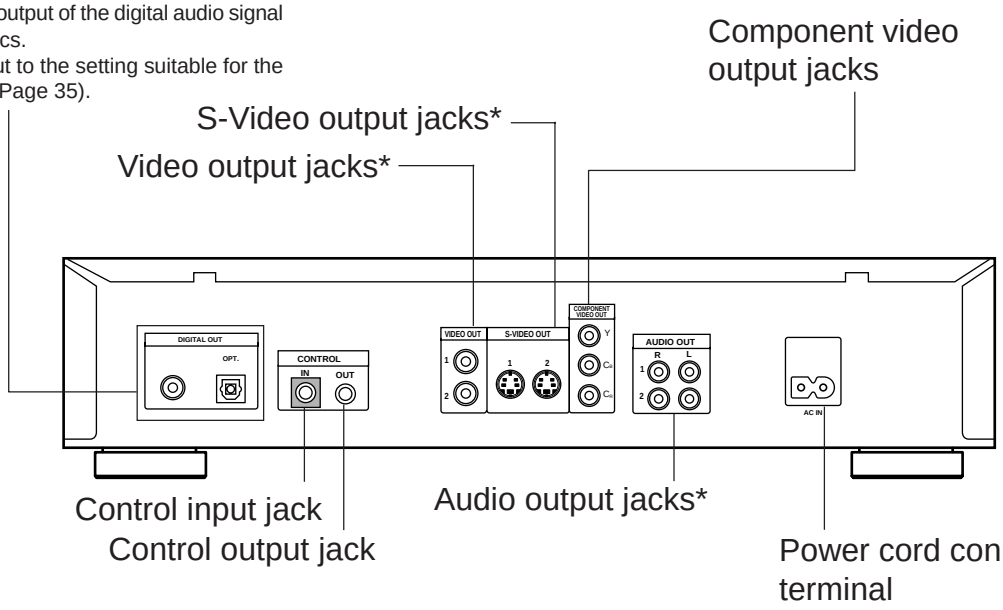
● 圖中所示的是帶有圓頭兩腳交流插頭的機型。



■ Rear panel for DV-05

Digital Output Jacks (Coaxial, Optical)

This is used for output of the digital audio signal recorded on discs.
Set digital output to the setting suitable for the amplifier used.(Page 35).

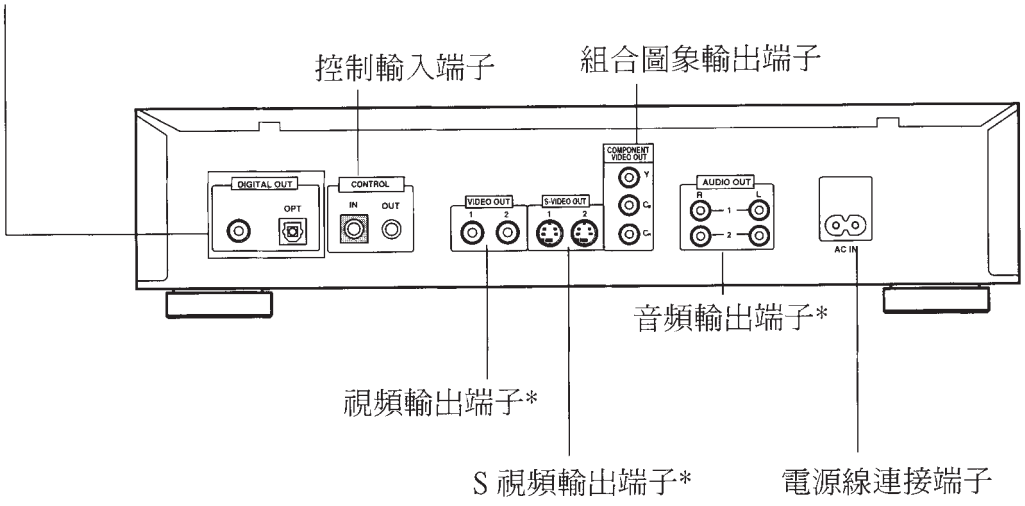


* There are two sets of outputs, 1 and 2, which you can simultaneously connect. Connect 1 to the TV, and 2 to your AV amplifier.

■ Rear panel for DV-S5

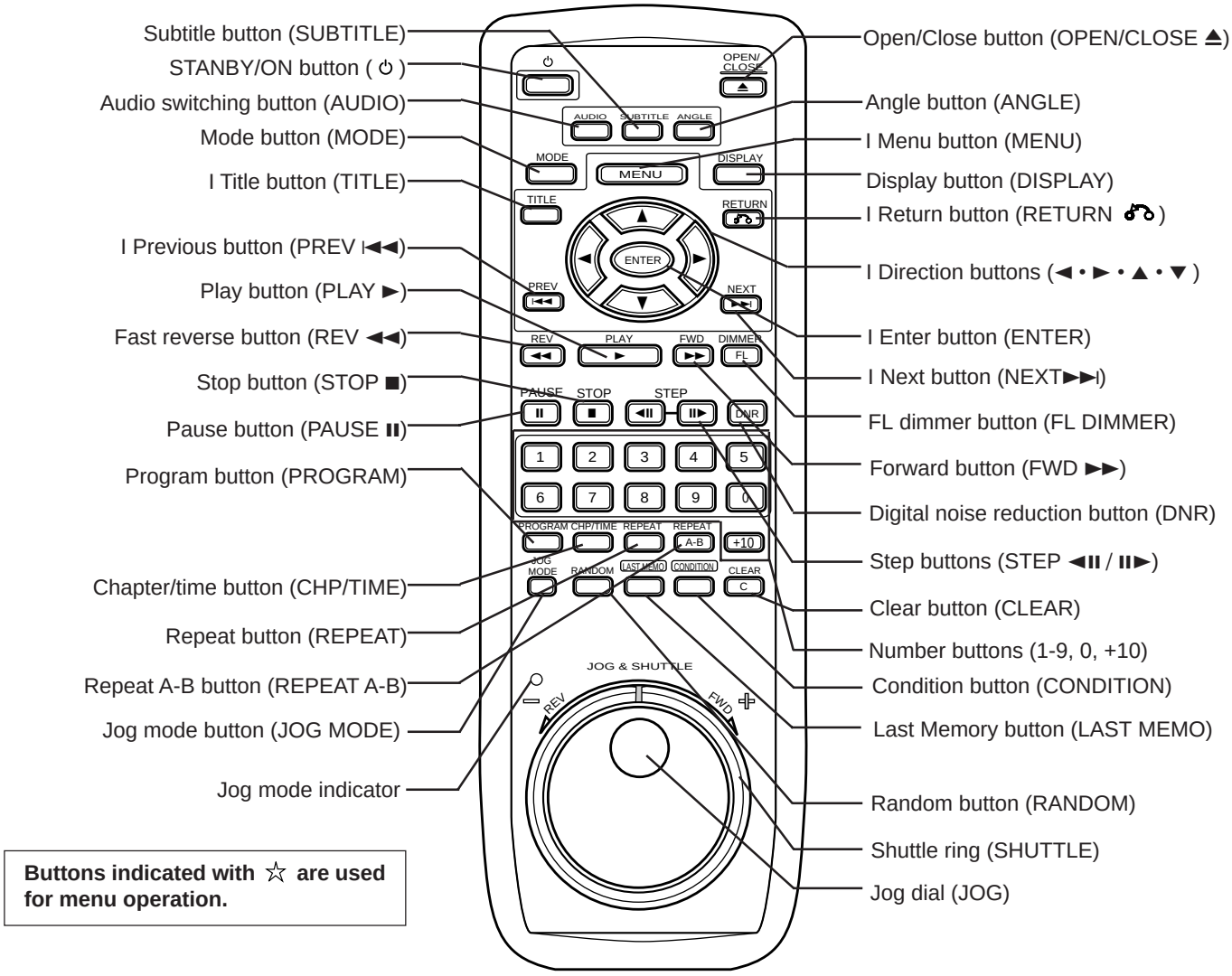
數字輸出端子（同軸，光纖）

該輸出端子用來輸出碟片的數字式音頻信號
請根據所使用的放大器進行數字輸出設定



* 有 1 和 2 兩種，也可兩種同時連接。1 可以連接電視機；2 可以連接 AV 放大器。

■ Remote control

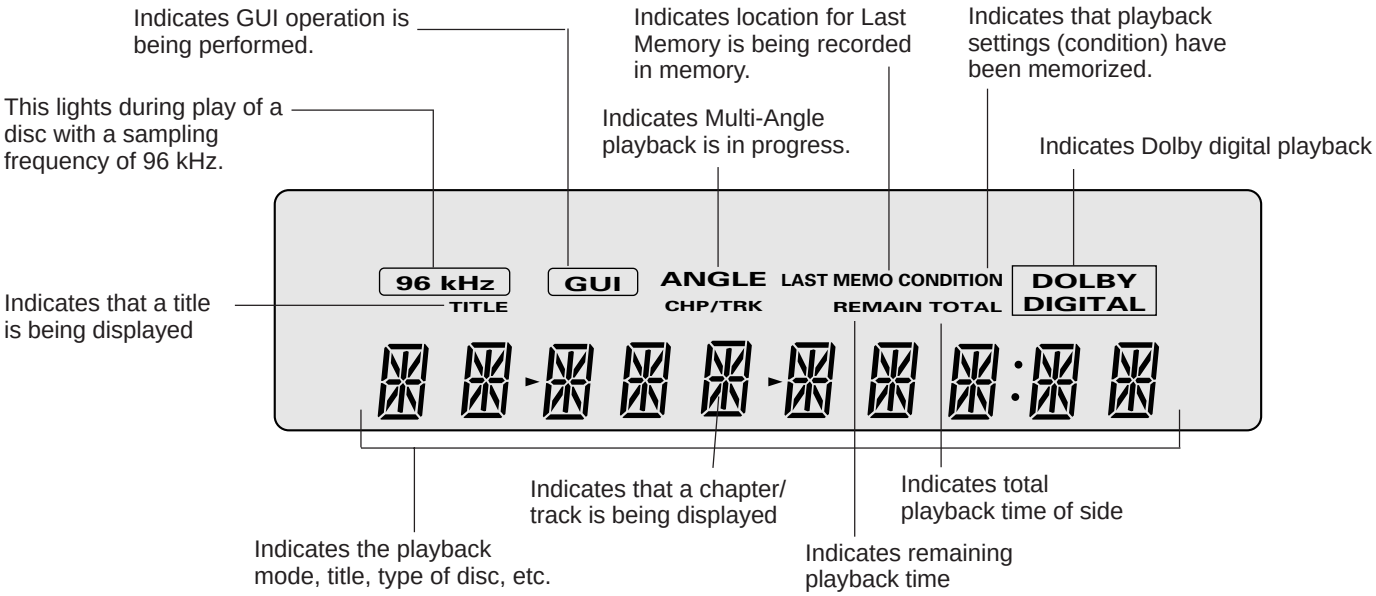


Buttons indicated with ☆ are used for menu operation.

■ Display window

When the FL DIMMER button is pressed, the FL display's brightness changes as follows:

Bright → Dim → Dark → FL OFF


Indicates GUI operation is being performed.
Indicates location for Last Memory is being recorded in memory.
Indicates that playback settings (condition) have been memorized.
This lights during play of a disc with a sampling frequency of 96 kHz.
Indicates Multi-Angle playback is in progress.
Indicates Dolby digital playback
Indicates that a title is being displayed
96 kHz
GUI
ANGLE
LAST MEMO
CONDITION
DOLBY DIGITAL
TITLE
CHP/TRK
REMAIN TOTAL
Indicates that a chapter/ track is being displayed
Indicates total playback time of side
Indicates the playback mode, title, type of disc, etc.
Indicates remaining playback time

■ SPECIFICATIONS for DV-05

General

System ..... DVD system and Compact Disc digital audio system
Power requirements ..... AC 120 V, 60 Hz
Power consumption ..... 20 W
Power consumption in standby mode ..... 1.5 W
Weight ..... 3.0 kg (6 lb $^{5}/_{8}$ oz)
Dimensions ..... 420 (W) x 283 (D) x 104 (H) mm ($16\ ^{9}/_{16}$ x $11\ ^{5}/_{16}$ x 4 in.) (Not including protruding cables, etc.)
Operating temperature ..... +5°C to +35°C (+36°F to +96°F)
Operating humidity ..... 5% to 85% (no condensation)

S-Video Output <2 system>

Y (luminance) - Output level ..... 1 Vp-p (75 Ω)
C (color) - Output level ..... 286 mVp-p (75 Ω)
Jacks ..... S-VIDEO jack

Video Output <2 system>

Output level ..... 1 Vp-p (75 Ω)
Jacks ..... RCA

Component video output <1 system>

(Y, C_B, C_R)
Output level ..... Y: 1.0 Vp-p (75 Ω)
C_B, C_R: 0.7 Vp-p (75 Ω)
Output jacks ..... Pin Jacks

Audio Output <2 system>

Output level
During audio output ..... 200 mVrms (1 kHz, –20 dB)
Number of channels 2
Jacks ..... RCA

Digital audio characteristics

Frequency response	4 Hz to 44 kHz (DVD fs: 96 kHz)
S/N ratio	115 dB
Dynamic range	103 dB
Total harmonic distortion	0.002 %
Wow and flutter	Limit of measurement (±0.001% W. PEAK) or lower

Other Terminals

Optical digital output ..... Optical digital jack
Coaxial digital output ..... RCA jack
CONTROL IN/OUT ..... Minijack (3.5ø)

Accessories

Remote control unit 1
AA (R6P) dry cell batteries 2
Audio cord 1
Video cord 1
Power cord 1
Operating Instructions 1
Warranty card (Region number ① models only.) 1

NOTE:

The specifications and design of this product are subject to change without notice, due to improvement.

"Dolby, Digital (AC-3)" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

■ SPECIFICATIONS for DV-S5

一般

系統 ..... DVD 、視頻CD以及緊湊唱碟數字式音頻系統
電源 ..... 交流110 V, 60 Hz
功耗 ..... 22 W
待機時的功耗 ..... 1.5 W
重量 ..... 6.4 kg
外形尺寸 ..... 420（寬）X 371（深）X 128（高）mm (不包括突出纜線)
容許使用溫度 ..... +5 ℃ － 35 ℃
容許使用濕度 ..... 5 %－ 85 %（不結露）

S－視頻輸出〈2 系統〉

Y（光度）－輸出水平 ..... 1 Vp-p (75 Ω)
C（彩度）－輸出水平 ..... 286 mVp-p (75 Ω)
輸出端子 ..... S-視頻端子

視頻輸出〈2 系統〉

輸出水平 ..... 1Vp-p（75 Ω）
輸出端子 ..... RCA 端子

組合圖象輸出〈1 系統〉

（Y，C_B，C_R）
輸出水平 ..... Y：1.0 Vp-p（75 Ω）
C_B，C_R：0.7Vp-p（75 Ω）
輸出端子 ..... RCA端子

音頻輸出〈2 系統〉

輸出水平
音頻輸出 ..... 200 mVrms(1 KHz, - 20 dB)
通道數 ..... 2 通道
輸出端子 ..... RCA端子

數字音頻特性 (DVD, fs=96 KHz/24bit)

頻率響應	4 Hz － 44 KHz（ DVD fs : 96 KHz）
信噪比	115 dB
動態範圍	105 dB
全高諧波失真率	0.002 %
不均勻性	小於可測水平 (± 0.001 % W.PEAK) 或更低

其他端子

光學數字輸出 ..... 光學數字連接
同軸數字輸出 ..... RCA插孔
控制輸入/輸出 ..... 微型插孔 (3.5 mm)

付屬品

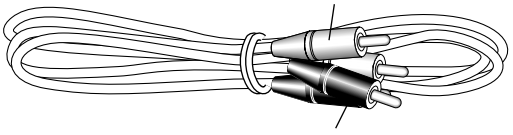
遙控器 1
AA(R6P)電池 2
音頻纜線 1
視頻纜線 1
電源線 1
使用說明書 1

注意

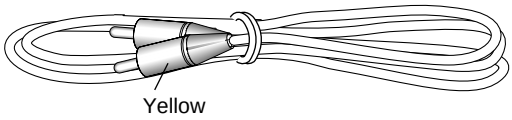
本機的規格和外形如有變化，恕不另行通知。

■ Accessories

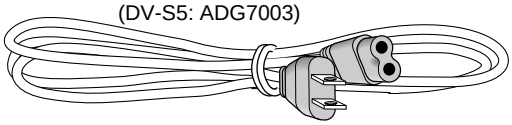
Audio cord (DV-05: VDE1023)
(DV-S5: VDE1033)
(L=1.5m)



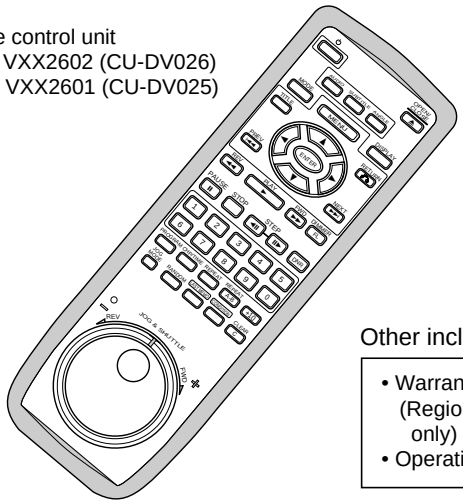
Video cord (DV-05: VDE1024)
(DV-S5: VDE1048)
(L=1.5m)



Power cord (DV-05: ADG7021)
(DV-S5: ADG7003)



Remote control unit
DV-05: VXX2602 (CU-DV026)
DV-S5: VXX2601 (CU-DV025)



Other included items :

- Warranty card
  (Region number ① models only)
- Operating Instructions

Batteries 2
(AA/R6P)